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LEASING OF OIL LANDS

1919

HEARINGS

BEFORE THE

COMMITTEE ON PUBLIC LANDS
UNITED STATES SENATE

SIXTY-FIFTH CONGRESS
FIRST SESSION

ON

S. 45

A BILL TO ENCOURAGE AND PROMOTE THE MINING OF
COAL, PHOSPHATE, OIL, GAS, POTASSIUM, AND
SODIUM ON THE PUBLIC DOMAIN

June
[illegible]

PART 1

Printed for use of the Committee on Public Lands

WASHINGTON
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1917

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LEASING OF OIL LANDS.

WEDNESDAY, ~~APRIL~~ June 13, 1917.

UNITED STATES SENATE,
COMMITTEE ON PUBLIC LANDS,
Washington, D. C.

The committee met, pursuant to call, at 10.30 o'clock a. m. in the committee room, Capitol, Senator Henry L. Myers presiding.

Present: Senators Myers (chairman), Pittman, Phelan, Husting, Norris, Sterling, and Shafroth.

Also present: Senator Thomas J. Walsh; Dr. Van. H. Manning, Director Bureau of Mines; Francis S. Peabody, chairman of the committee on coal production, Council of National Defense; Hon. Charles A. Sulzer, Delegate from Alaska; John D. Pennock; and Mr. Charles H. MacDowell, president Armour Fertilizer Works, Chicago, Ill.

The committee proceeded to consider the bill (S. 45) to encourage and promote the mining of coal, phosphate, oil, gas, potassium, and sodium on the public domain, as follows:

A BILL To encourage and promote the mining of coal, phosphate, oil, gas, potassium, and sodium on the public domain.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That deposits of coal, phosphate, oil, gas, potassium, or sodium, in land owned by the United States and not otherwise reserved, shall be subject to disposition in the form and manner provided by this act to citizens of the United States, or to those who have declared their intention to become such, or to any association of such persons, or to any corporation organized under the laws of the United States, or of any State or Territory thereof, and in the case of coal oil, or gas to qualified municipalities.

Sherman 25 Jan. 1960

COAL.

SEC. 2. That deposits of coal or lignites belonging to the United States, exclusive of those in Alaska, may at the election of applicants qualified to enter coal lands under existing laws and to lease mineral deposits under the provisions of this bill, be acquired from and after the passage of this act, in accordance with the provisions of sections twenty-three hundred and forty-seven to twenty-three hundred and fifty-two, inclusive, of the United States Revised Statutes, and acts amendatory thereof or supplemental thereto, or may be leased, as hereinafter provided.

SEC. 3. That the Secretary of the Interior is authorized to lease any deposits of coal or lignite owned by the United States, outside of the Territory of Alaska, through advertisement, competitive bidding, or such other methods as he may by general regulations adopt, in blocks or tracts of forty acres each, or multiples thereof, and in such form as in the opinion of the Secretary of the Interior will permit of the most economical mining of the coal in such blocks or tracts, but in no case exceeding two thousand five hundred and sixty acres in any one block or tract, said lands to be in compact form, as nearly as may be, no tract to exceed in length two and one-half times its width; if surveyed, to be described by the legal subdivisions of the public-land surveys;

if unsurveyed, to be surveyed at the expense of the applicant for lease and in accordance with the laws, rules, and regulations governing the survey of placer-mining claims.

SEC. 4. That any person, association, or corporation holding a lease of coal lands under this act may, with the approval of the Secretary of the Interior and through the same procedure and upon the same terms and conditions as in case of an original lease under this act, secure a further or new lease covering additional lands contiguous to those embraced in the original lease, but in no event shall the total area embraced in such original and new lease exceed in the aggregate two thousand five hundred and sixty acres.

SEC. 5. That, subject to the approval of the Secretary of the Interior, lessees holding under lease small blocks or areas may consolidate their leases or holdings so as to include in a single holding not to exceed two thousand five hundred and sixty acres of contiguous lands.

SEC. 6. That for the privilege of mining, extracting, and disposing of the coal in the lands covered by his lease, lessee shall pay to the United States such royalties as may be specified in the lease, which shall not be less than 2 cents per ton, due and payable at the end of each month succeeding that of the shipment of the coal from the mine, and the annual rental payable at the beginning of each year, on the lands covered by such lease, at the rate of 25 cents per acre for the first year thereafter, 50 cents per acre for the second and third years, and $1 per acre for each and every year thereafter during the continuance of the lease, except that such rental paid for any one year shall be credited against the royalties as they accrue for that year. Leases shall be for indeterminable periods upon condition of continued operation of the mine or mines, except when operation shall be interrupted by strikes, the elements, or casualties not attributable to the lessee, and upon the further condition that at the end of each twenty-year period succeeding the date of the lease such readjustment of terms and conditions may be made by the Secretary of the Interior as may be authorized by law at the time of expiration of such periods.

SEC. 7. That in order to provide for the supply of strictly local and domestic needs for fuel, the Secretary of the Interior may, under such ruls and rgulations as he may prescribe in advance, issue to any applicant qualified under section one of this act a limited license or permit granting the right to prospect for, mine, and dispose of coal belonging to the United States on specified tracts, not to exceed ten acres to any one person or association of persons for a period of not exceeding ten years, on such conditions not inconsistent with this act as in his opinion will safeguard the public interest without payment of royalty for the coal mined or rental for the land occupied: *Provided*, That the acquisition or holding of a lease of coal lands or deposits under this act shall be no bar to the acquisition, holding, or operating under the limited license or permit in this section authorized, nor shall any permit issued under ths section be held to abridge the right of any person to secure or enjoy any lease issued under the authority of this act or any interest in such lease.

PHOSPHATES.

SEC. 8. That the Secretary of the Interior is hereby authorized to lease to any person qualified under this act any lands belonging to the United States containing deposits of phosphates, under such restrictions and upon such terms as are herein specified, through advertisement, competitive bidding, or such other methods as the Secretary of the Interior may by general regulation adopt.

SEC. 9. That each such lease shall be for not to exceed two thousand five hundred and sixty acres of land, to be described by the legal subdivisions of the survey, or if unsurveyed by permanent monuments so placed upon the ground that the boundaries can be readily traced, the land embraced in any one lease to be in compact form, not exceeding in length more than two and one-half times its width.

SEC. 10. That for the privilege of mining, extracting, and disposing of the phosphates covered by a lease the lessee shall pay to the United States such royalties as shall be specified in the lease, which shall be not less than two per centum on the gross value of the output of phosphates at the point of production, and an annual rental at the beginning of each year at the rate of $1 per acre per annum for the lands included in such lease, the rental paid for any one year to be credited against the royalties accruing for that year. Leases may be for indeterminate periods, upon such conditions not inconsistent herewith as may be specified in general rules and regulations issued by the Secretary of the Interior, including covenants relative to mining method, waste, period of preliminary development, and minimum production.

SEC. 11. That any person or persons to whom the Secretary of the Interior may grant a lease to develop and extract phosphates under the provisions of this act, shall have the right to use so much of the surface of unappropriated and unentered lands, not exceeding forty acres, as may be determined by the Secretary of the Interior to be necessary for the proper prospecting for, or development, extraction, treatment, and removal of such mineral deposits, upon payment of an annual rental of not less than 25 cents per acre per annum.

OIL AND GAS.

SEC. 12. That the Secretary of the Interior is hereby authorized, under such rules and regulations as he may prescribe, to grant to any qualified applicant a prospecting permit, which shall give the exclusive right for a period not exceeding two years to prospect for oil or gas upon not to exceed six hundred and forty acres of land, if the same are situated within fifty miles from any producing oil or gas well, or upon not to exceed two thousand five hundred and sixty acres if the same are situated over fifty miles from any producing oil or gas well, upon condition that the permittee shall begin mining operations within four months from the date of the permit, and shall within one year from and after the date of permit drill an oil or gas well to a depth of not less than five hundred feet, and shall within two years from the date of the permit drill oil or gas wells aggregating in depth not less than two thousand feet. If the lands sought in any such application and permit are unsurveyed, the applicant shall, prior to filing his application for permit, locate the lands in square or rectangular tracts, the length of which shall in no case exceed two and one-half times its width, and mark each of the corners thereof upon the ground with permanent monuments, so that the boundaries can be readily traced. Upon the granting of a permit for the exploration of such a tract of unsurveyed land the permittee shall post in a conspicuous place upon the lands described in the permit a notice that such permit has been granted and a descripiton of the lands covered thereby.

SEC. 13. That upon establishing to the satisfaction of the Secretary of the Interior that valuable deposits of oil or gas have been discovered within the limits of the land embraced in any such permit the permittee shall be entitled to a patent for one-fourth of the land embraced in the prospecting permit, such area to be selected by the permittee in compact form and according to the legal subdivisions of the public-land surveys if the land be surveyed, or to be surveyed at his expense in accordance with the laws, rules, and regulations governing the survey of placer mining claims if located upon unsurveyed lands.

SEC. 13a. Until the permitte shall apply for patent to the land selected by him, he shall pay to the United States twenty-five per cenum of the gross value of all oil or gas secured by him from the lands embraced within his permit and sold or otherwise disposed of or held by him for sale or other disposition, and upon making his selection and application for patent all his rights under his permit, save as to the lands embraced in his application, shall terminate.

SEC. 14. That all permits, leases, entries, and patents of lands containing oil or gas, made or issued under the provisions of this act, shall be subject to the condition that no wells shall be drilled within two hundred feet of any of the outer boundaries of the land so located, leased, entered, or patented, unless the adjoining lands have theretofore been patented or the title thereto otherwise vested in private owners, and to the further condition that the locator, lessee, entryman, or patentee will, in conducting his explorations and mining operations, use all reasonable precautions to prevent waste of oil or gas developed in the land, or the entrance of water through wells drilled by him to the oil sands or oil-bearing strata, to the destruction or injury of the oil deposits. Violations of the provisions of this section constitute grounds for the forfeiture of the location, entry, lease, or patent, to be enforced through appropriate proceedings in courts of competent jurisdiction.

SEC. 15. That all deposits of oil or gas, and the lands containing same, described and embraced in such a prospecting permit, other than those patented or for which application for patent has been made by the permittee, shall, from and after the exercise of the preference right accorded to the discoverer, or after the expiation of the time within which he may exercise such preference right, be held subject to lease, and may be leased, by the Secretary of the

Interior, through competitive bidding or such other methods as he may adopt by general regulations, in areas not exceeding two thousand five hundred and sixty acres and in tracts which shall not exceed in length two and one-half times their width, such leases to be conditioned upon the payment by the lessee of such royalty as may be fixed in the lease and the payment in advance of a rental of $1 per acre per annum thereafter during the continuance of the lease, the rental paid for any one year to be credited on the royalty for that year. Leases shall be for a period of ten years, with the preferential right in the lessee to renew the same for a second period of ten years upon such reasonable terms and conditions as may be prescribed by the Secretary of the Interior. Every such lease shall also include such conditions not inconsistent herewith as may be prescribed in general rules and regulations issued by the Secretary of the Interior, including covenants relative to continuous operations, mining methods, waste, water damage, distance from adjacent lands where wells can be drilled, period of preliminary development, and minimum production.

POTASSIUM OR SODIUM.

SEC. 16. That the Secretary of the Interior is hereby authorized and directed, under such rules and regulations as he may prescribe, to grant to any qualified applicant a prospecting permit which shall give the exclusive right to prospect for chlorides, sulphates, carbonates, borates, or nitrates of potassium or sodium dissolved in and soluble in water, and accumulated by concentration, in lands belonging to the United States for a period of not exceeding three years: *Provided*, That the area to be included in such a permit shall be not exceeding two thousand five hundred and sixty acres of land in reasonably compact form.

SEC. 17. That upon showing to the satisfaction of the Secretary of the Interior that valuable deposits of one of the substances enumerated in section sixteen hereof has been discovered by the permittee within the area covered by his permit the permittee shall be entitled to a patent for one hundred and sixty acres of the land embraced in the prospecting limit, to be taken and described by legal subdivisions of the public-land surveys, or if the land be not surveyed by survey executed at the cost of the permittee in accordance with the laws, rules, and regulations governing the survey of placer mining claims. All other lands described and embraced in such a prospecting permit, from and after the exercise of the preference right accorded to the discoverer, and all other lands known to contain such valuable deposits as are enumerated in section sixteen hereof and not covered by permits or leases, shall be held subject to lease, and may be leased by the Secretary of the Interior through advertisement, competitive bidding, or such other methods as he may by general regulations adopt, and in such areas as he shall fix, not exceeding two thousand five hundred and sixty acres, all leases to be conditioned upon the payment by the lessee of such royalty as may be fixed in the lease, not less than two per centum per annum on the gross value of the output at the point of production, and the payment in advance of a rental of 50 cents per acre for the first calendar year or fraction thereof and $1 per acre per annum thereafter during the continuance of the lease, the rental paid for any one year to be credited on the royalty for that year. Leases may be for indeterminate periods upon such conditions not inconsistent herewith as may be incorporated in each lease or prescribed in general regulations theretofore issued by the Secretary of the Interior, including covenants relative to mining methods, waste, period of preliminary development, and minimum production.

SEC. 18. That in addition to areas of mineral land which may be included in any such prospecting permits or leases, the Secretary of the Interior, in his discretion, may grant to a permittee or lessee of lands containing phosphate deposits, and subject to the payment of an annual rental of not less than 25 cents per acre, the exclusive right to use, during the life of the permit or lease, a tract of unoccupied nonmineral public land, not exceeding twenty acres in area for camp sites, refining works, and other purposes connected with and necessary to the proper development and use of the potassium deposits covered by the permit or lease.

GENERAL PROVISIONS APPLICABLE TO COAL, PHOSPHATE, OIL, GAS, POTASSIUM, OR SODIUM LEASES.

SEC. 19. That the Secretary of the Interior shall reserve the authority and shall insert in any preliminary permit issued under this act appropriate provisions for its cancellation by him upon failure by the permittee or licensee to exercise due diligence in the prosecution of the prospecting work in accordance with the terms and conditions stated in the permit.

SEC. 20. That no person, association, or corporation, except as herein provided, shall be permitted to take or hold any interest, as a stockholder or otherwise, in more than one lease of each of the deposits herein named and described, during the life of such lease, and any interest held in violation of this provision shall be forfeited to the United States by appropriate proceedings instituted by the Attorney General for that purpose in any court of competent jurisdiction, except that any such ownership or interest hereby forbidden, which may be acquired by descent, will, judgment, or decree, may be held for two years and not longer after its acquisition.

SEC. 21. That no person, association, or corporation holding a lease under the provisions of this act shall hold any interest, direct or indirect, in any agency, corporate or otherwise, engaged in the resale of coal, phosphate, oil, gas, potassium, or sodium purchased from such lessee, or enter into any arrangement, agreement, or other device to enhance the price of such minerals or products, and any violation of the provisions of this section shall be ground for the forfeiture of the lease or interest held.

That any person who shall purchase, acquire, or hold any interest in two or more leases of each of the deposits herein named and described, except as herein provided, or who shall knowingly purchase, acquire, or hold any stock in a corporation having an interest in two or more such leases, or who shall knowingly sell or transfer to one disqualified to purchase, or, except as in this act specifically provided, disqualified to acquire, any such interest, shall be deemed guilty of a felony, and upon conviction shall be punished by imprisonment for not more than three years and by a fine not exceeding $1,000: *Provided*, That any such ownership and interest hereby forbidden which may be acquired by descent, will, judgment, or decree may be held two years after its acquisition and not longer.

That any director, trustee, officer, or agent of any corporation holding any interest in such a lease who, on behalf of such corporation, shall knowingly participate in the purchase of any interest in another lease of the same substance or deposit or in the sale or transfer of any such interest in any lease for the same substance or deposit held by such a corporation to any corporation or individual holding any interest in any similar lease under this act, except as herein provided, shall be guilty of a felony, and shall be subject to imprisonment for a term of not exceeding three years and a fine of not exceeding $1,000.

SEC. 22. That any permit, lease, occupation, or use permitted under this act shall reserve to the Secretary of the Interior the right to permit for joint or several use such easements or rights of way upon, through, or in the lands leased, occupied, or used as may be necessary or appropriate to the working of the same, or of other lands containing the deposits described in this act, and the treatment and shipment of the products thereof by or under authority of the Government, its lessees, or permittees, and for other public purposes: *Provided*, That said Secretary, in his discretion, in making any lease under this act may reserve to the United States the right to lease, sell, or otherwise dispose of the surface of the lands embraced within such lease under existing law or laws hereafter enacted in so far as said surface is not necessary for use of the lessee in extracting and removing the deposits therein.

SEC. 23. That no lease issued under the authority of this act shall be assigned or sublet except with the consent of the Secretary of the Interior. Each lease shall contain such provisions for the purpose of insuring the exercise of reasonable diligence, skill, and care in the operation of said property; a provision that such rules for the safety and welfare of the miners and for the prevention of undue waste as may be prescribed shall be observed, and such other provisions as are needed for the protection of the interests of the United States, for the prevention of monopoly, and for the safeguarding of the public welfare.

SEC. 24. That any lease issued under the provisions of this act may be forfeited and canceled by an appropriate proceeding in a court of competent jurisdiction whenever the lessee fails to comply with any of the provisions of this act, of the lease, or of general regulations promulgated under this act and in force at the date of the lease; and the lease may provide for resort to appropriate methods for the settlement of disputes or for remedies for breach of specified conditions thereof.

SEC. 25. That the Secretary of the Interior is hereby authorized to perform any and all acts and make such rules and regulations as he may deem necessary and proper for the purpose of carrying the provisions of this act into full force and effect, and all permits, leases, foreclosures, purchases, or assignments shall be subject to such rules and regulations, and the failure of any permittee or lessee, or his successor or successors, to comply with the terms and conditions of the permit or lease shall work a forfeiture of the same: *Provided*, That the jurisdiction of the district courts of the United States shall extend to and over any forfeiture or cancellation proceeding instituted under the provisions of this act, except in the Territory of Alaska, wherein such matters shall fall within the jurisdiction of the district court of Alaska.

SEC. 26. That all statements, representations, or reports required by the Secretary of the Interior under this Act shall be on oath unless otherwise specified, and in such form and upon such blanks as the Secretary of the Interior may require, and any person making false oath, representation, or report shall be subject to punishment as for perjury.

SEC. 27. That any of the public lands of the United States withdrawn, covered by permits, or leased as coal, phosphate, oil, gas, potassium, or sodium lands, or valuable for any of said deposits, shall be subject to appropriate entry under the homestead laws by actual settlers only, the desert-land law, to selections by the State wherein the lands are situated under grants made by Congress and under section four of the Act approved August eighteenth, eighteen hundred and ninety-four, known as the Carey Act, and to withdrawal under the Act approved June seventeenth, nineteen hundred and two, known as the reclamation Act, whenever such entry, selection, or withdrawal shall be made with a view of obtaining or passing title, with a reservation to the United States of the oil, gas, potassium, sodium, phosphates, and coal in such lands, and the right of the United States, its permittees, lessees, or grantees to prospect for, mine, and remove the same, but no desert entry made under the provisions of this Act shall contain more than one hundred and sixty acres: *Provided*, That all applications or selections made under the provisions of this section shall state that same are made in accordance with and subject to the provisions and reservations of this Act: *Provided further*, That upon satisfactory proof of full compliance with the provisions of the laws under which the entry or selection is made and of this section the entrymen or selector shall be entitled to a patent to the land entered or selected, which patent shall contain a reservation to the United States of all the coal, phosphates, oil, gas, potassium, or sodium in the lands so patented, together with the right of the United States, its grantees, permittees, or lessees to prospect for, mine, and remove the same upon rendering compensation to the patentee for all damages that may be caused to the crops or tangible improvements of the entryman, selector, or owner by prospecting for and removing said minerals.

SEC. 28. That the provisions of this act shall apply to all lands of the United States which may have been or may be disposed of under laws reserving to the United States the coal, phosphate, oil, gas, potassium, or sodium, with the right to prospect for, mine, and remove the same, subject to such conditions as to the use and occupancy of the surface as may be provided by applicable laws.

SEC. 29. That all moneys received from royalties and rentals under the provisions of this act, excepting those from Alaska, shall be paid into, reserved, and appropriated as a part of the reclamation fund created by the act of Congress approved June seventeenth, nineteen hundred and two (Thirty-second Statutes at Large, page three hundred and eighty-eight), but after use thereof in the construction of reclamation works and upon return to the reclamation fund of any such moneys in the manner provided by the reclamation act, fifty per centum of the amounts derived from such royalties and rentals so utilized in and returned to the reclamation fund shall be paid by the Secretary of the Treasury, after the expiration of each fiscal year, to the State within the boundaries of which the leased premises or resources are or were located, said moneys to be used by such State for the support of public schools or other educational institutions, or for the construction of public improvements, as the legislature of the State may direct; and all moneys received from royalties and rentals in the Territory of Alaska under the provisions of this act shall be paid into, reserved, and set aside as a special fund, the moneys therein to be subject to such disposition as Congress has made or may make for the development, improvement, and betterment of the Territory of Alaska, and particularly subject to the application of such moneys as has been or may be provided in any bill authorizing the construction of railroads by the United States in the Territory of Alaska.

SEC. 30. That all laws or portions of laws in conflict herewith are hereby repealed, except as to valid claims existent at date of the passage of this act and hereafter maintained in compliance with the laws under which initiated.

The CHAIRMAN. The committee will come to order. Senator Walsh, you may proceed.

STATEMENT OF HON. THOMAS J. WALSH, A SENATOR OF THE UNITED STATES FROM MONTANA.

Senator WALSH. I desire to say a word or two concerning the features of the bill dealing with coal lands. There is a needed and pressing necessity for legislation which will open to development and utilization the coal deposits in the West. I was waited upon by Mr. F. B. Connell, of Billings, Mont., a week ago, who expressed very great concern about the continually mounting prices of coal in Montana. His coal company operates across the line into the State of Wyoming, and carries on a large trade. It is my recollection that he had three price lists issued during the last three months, the prices quoted in the last price list being from 80 to 100 per cent above those in the first list. I shall ask the committee for leave to supply the lists in the record.

The CHAIRMAN. That may be done.

Senator STERLING. Let me ask were those lists of prices as they had been and as they are now, or were they prospective in any way?

Senator WALSH. No; they were lists put out to the trade saying, "We will furnish coal until further order at the following prices." That was 18 months ago, say. Then, about 12 months ago another list was put out saying, "Our prices for coal until further notice will be as follows." Then 6 months ago, then a recent one, so that it shows you the advance in the prices of coal and the jumps of about 25 to 40 per cent as the various lists came out.

I have a letter here from a very highly esteemed citizen of my State. This letter bears date the 27th of May, 1917. From this letter I desire to read as follows:

> We in Montana are facing a most peculiar condition as to our coal supply. My coal dealer informed me a day or two ago that if I did not place an order for my entire needs for the coming winter before the middle of June I would probably be forced to either go without coal or pay from $10.50 to $12 per short ton for it. This had reference to Montana coal. In the past 40 years of my residence in Montana I have been a consumer of coal to a considerable extent every year, and base on my experience with and use of Montana coals, I am free to say that I consider the Bear Creek coal to be the best to be had in Montana. My first trial of this coal was in Helena, and its price to me then, delivered in the bin, was $5.75 per ton in 5-ton lots. At that time there was no railway connecting the Bear Creek mines with any trunk line and the product was hauled in wagons to the nearest railway point for a distance of from 5 to 7 miles. After the mines were connected with a railway, and the wagon transportation cost was eliminated, the price of Bear Creek coal was raised to $6 per short ton. It remained at that price for some 2 or 3 years and then was raised to $6.50 per ton.
>
> After my removal from Helena to Plains I bought Bear Creek coal for $7.50 per short ton, delivered in my bin. At this time my friends and neighbors in Thompsons Falls, who lived 25 miles farther away, were paying $7 a ton for it on the cars.
>
> Last winter I had to pay $8.50 per ton and in order to get that price had to place my order during the summer months and before October 1. If I had not placed my order at that time, I would have been obliged to go without coal entirely, as the coal shortage began here early in November, and since December 1, 1916, we in Plains could not get a pound of coal at any price.
>
> While it must be conceded that there has been an increase in the wages paid to the miners and other workers in the coal mines in our State, and that the cost of explosives has about doubled, still the price of $8.50 per ton must be considered about as high as it ought to be, if not a little too high.

Senator **Sterling**. May I ask as to the kind or quality of that coal and how it compares with bituminous coal elsewhere?

Senator **Walsh**. It ranks quite a good deal better, Senator Sterling, than the coal you are accustomed to burning in South Dakota. It is quite chystaline in appearance. It is a very much higher grade of coal than that.

Senator **Husting**. I should like to ask you, Senator, is it your contention that the high price of coal is due to shortage, or to the unwillingness of laborers to work, or the lack of working mines, or because of the want of transportation, or all together? What is your contention?

Senator **Walsh**. This letter, which is from Mr. H. J. Burleigh, of Plains, Mont., attributes it very largely to the fact that the supply for that section of the States comes from the mines at Red Lodge. The mines at Red Lodge are on the Northern Pacific Railroad, and he attributes it to the exactions of the railroad company. I have not gone into it sufficiently to say what justification there is for that. But the point that I am making in respect to that is that everything else in the State is tied up and there is no opportunity for anybody to go in and open up any other mines. The Milwaukee Road, for instance, some years ago opened some coal mines at Roundup, on its line, and its source of supply being exhausted, we were obliged to pass a special act permitting the Republican Coal Co. to buy from the Government two sections of land, or a section and a half, or thereabouts. We want to at least to give to other people who care to invest to supply the community with coal an opportunity to go in and appropriate the lands.

I also want to say that two days ago Mr. C. F. Kelly, who is vice president of the Anaconda Copper Mining Co., called on me, and I asked him to be present to-day, but I received a letter from him last night saying he is unable to attend. The Anaconda Co. supplies itself with coal from the Diamond mines in the State of Wyoming. They are overwhelmed with demands from everywhere for coal. The Union Pacific is calling upon them insistently for a supply that they are unable to provide, and they are unable to provide it because, while they have a considerable area of land in that locality, the coal is so situated that it is not easily obtainable, while there is other coal on, I think, lands adjacent that is very easily obtainable.

The Supreme Court decided a case a little while ago in which the title to lands belonging to the Anaconda Co., or conveyed to the Anaconda Co., in the vicinity of the Danville mines, patents were annulled on the ground of fraud. They fell back then into the general body of the public lands and are subject to disposition, if they are subject to disposition at all, under the existing law which authorizes the Secretary of the Interior to put a value upon the mines and then to sell them, as you will recall, not to exceed 160 acres to one man or 320 acres to a group of men, two or more, or 640 acres when $5,000 of improvements are put upon these 640 acres. Under that they found an opportunity to buy these lands at an appraised price, some fabulous figure, I have forgotten what it was; it seems to me about $250 an acre was put upon the land, and they have offered to pay that and have tendered the money, but it is awaiting the slow process of adjustment in the department down here, and they are unable to utilize those lands, from which they could supply the trade with considerable ease and freedom.

Senator SHAFROTH. Do you not regard this condition as being caused by withdrawal of these coal lands and putting upon them such outrageous prices that people will not take them?

Senator WALSH. Very largely. That is the point I am trying to make, that under the existing law the department has reached the conclusion, and in that they have persisted during all these years, that the policy of selling these lands outright is wrong. And I need not say that I am in accord with them on that idea. I have reached the conclusion that so far as our coal lands are concerned, and our oil lands and our gas lands, the foundation of power, that it is a most unwise policy to let them absolutely go out of the hands of the Government. I am in favor of the principle of this bill. I asked Mr. Kelly what he thought about it, what he would say. He said, "We want to get them no matter how we get them; we will lease them, buy them, or do anything to get them." The Milwaukee Road said the same thing, "We will buy these lands or lease them, it does not make any difference to us; just let us operate them."

Senator SHAFROTH. This shortage in the supply of coal in the West did not exist, though, before the withdrawals and before the higher prices put upon the land?

Senator WALSH. That is true, sir. I have no doubt in the world that if the lands were sold as they have been in the past at $10 per acre when more than 15 miles from a railroad, and at $20 an acre when within 15 miles of a railroad, that practically all of these lands would by this time have passed, or the greater part of them would have passed into private ownership, and of course they would be operated.

Senator SHAFROTH. I will state that in my State the lands are open for 50 years, and only 1½ per cent of the public lands were taken under that general proposition of entry under the Federal laws of the United States.

Senator WALSH. Of course, taking our State, for instance, we have doubled in population since the last census.

Senator SHAFROTH. Yes; that may be.

Senator WALSH. Since the census of 1910 our State has doubled in population, and I presume probably with the added industries the consumption of coal has more than doubled during that time.

Senator PHELAN. With coal selling at $8.50 per ton what is the price of oil per barrel?

Senator WALSH. I do not know, Senator.

Senator HUSTING. In connection with what Senator Shafroth said, is it not a fact that the Federal Trade Commission reported plenty of coal, and that the trouble appears to be to get it to the consumer? Now, in connection with that, the fact that a great deal of the difficulty in connection with high prices is that the control of the output of coal is lessened, and in the way the transportation of coal is not in the hands of the Government, and that if the mines now open were disposed to work to full capacity, and facilities were at hand to distribute the coal, we would not be in the condition we are now? In other words, are not these high prices and the shortage of coal due rather to lack of proper governmental power and control over these matters than it is because the coal is short, and are you going to help that any by turning more of these coal lands into private ownership and releasing all Government control in the price?

Senator WALSH. You put too many questions to me at once, Senator. As to the general coal situation, Mr. Peabody will be able to give you information very much more in detail and much more satisfactorily in every way than I can. If you ask me about the conditions in the West, which we hope to relieve by the operation of this bill, I will say to you that to my mind the mounting prices of coal in that country arise by reason of the fact that no new coal mines are being opened up; that they are all hermetically sealed.

Senator HUSTING. Then you think if this act was passed and they do the same things in the West with these coal lands that they are doing in the East that you will have a permanent relief? Is there anything to prevent them going ahead and manipulating prices of coal?

Senator WALSH. Senator Husting, I find it difficult to follow you. We are trying to do something here so that they will not do with the coal lands of the West what they have done with the coal lands of the East. I hope I may be able to make that clear to you. The coal lands of the East were disposed of absolutely in fee, without any reservation whatever to the Government, either meanwhile or eventually. They were gone, and that is the system that up to the present time has been followed in the West. This bill is intended to inaugurate the other system under which the operator will have a leasing of the property for a limited period, paying a royalty to the Government, and the title ceasing at the end of the period of the lease.

The CHAIRMAN. If the members of the committee will pardon me for interrupting the discussion, I will say that Mr. Peabody was invited here and is extremely anxious, on account of other engagements, to be heard as soon as possible, so that he can get away; and if there is no objection, I should like him to be heard now.

STATEMENT OF MR. FRANCIS S. PEABODY, NATIONAL COUNCIL OF DEFENSE, WASHINGTON, D. C.

The CHAIRMAN. Mr. Peabody, please state your title and address.

Mr. PEABODY. I am chairman of the committee on coal production under the National Council of Defense, my duties being to increase by every possible means the production of coal and in conjunction with the committee on transportation to expedite its delivery and make more liquid the movement of coal.

My residence is Hinsdale, Ill., but I am at present residing in Washington, D. C.

The CHAIRMAN. We shall be glad to hear what you have to say on the subject.

Mr. PEABODY. I have not seen the bill, Senator. I did not know what bill I was going to be called upon to discuss.

The CHAIRMAN. I think the committee would like to have your views on the coal situation—as to what is the cause of the shortage and what is necessary in order to increase the supply.

Mr. PEABODY. I shall be glad to address the committee and to summarize the coal situation at the present moment. In the first place, the United States as a whole are producing more coal to-day than they ever produced in their history. In the month of May the anthracite industry produced 1,300,000 tons more coal than in May a year ago. We are getting reports from all of the bituminous districts in the United States, and they all show an increase over a year ago.

The capacity of the mines in the East—I am not now treating of the western situation, Senator Walsh, but the capacity of the mines in the East and the amount of labor that is capable of digging coal is sufficient to increase the production of bituminous coal this year approximately 100,000,000 tons. It goes without saying that this production will be of no value unless transportation is furnished for the coal after it has been produced. Our records show that the average running time per year—and now I am speaking not from exact figures, but approximate figures—is 200 days in the bituminous field. The bituminous fields produced last year approximately 530,000,000 tons of coal in an average of 200 or 210 working days. It goes without saying, gentlemen, that if they could have worked 300 days, or if they can work 300 days this year, they could produce approximately 30 per cent more than during last year. We do not expect a 30 per cent increase in bituminous coal, but we do expect approximately a 20 per cent increase in bituminous-coal production during the coming year.

Canada, especially in the northeastern section, the Nova Scotia fields, is extremely short of labor, many men having enlisted and having left the coal industry, so much so that we estimate we shall have to deliver to Canada or take up the slack that Canada can not fill, some two and one-half million tons from the eastern bituminous fields, to take up, for example, the coal that the Boston & Maine used, that the New York, New Haven & Hartford used, heretofore furnished by the Nova Scotian fields. Italy is asking us for 300,000 tons a month of gas and low volatile coal for battleship and commercial purposes.

The Argentine, Brazil, all of the South American Republics—I have not the statistics with me—heretofore supplied by England, will have to be supplied by this country. Every manufacturer and every industry in the United States is running full speed; we have no statistics to show how much the increase in consumption is, but it is enormous. Factories heretofore running one shift are running two and three. The munitions factories, the powder factories, the shipping yards, the steel works, every one of the industries, including the railroads, are burning more coal than they have heretofore burned.

My own feeling in regard to the situation is that we are confronted now with the emergency of winning this war, and that this war can only be won by furnishing sufficient coal or oil, or whatever the product may be that will make steam and make power, and we must furnish it. I class coal ahead of food. Perhaps that is a little personal jealousy on my part of the food question against coal. Coal agrees with me better than food. But the two items, coal and food—this war has got to be won by them.

Senator PHELAN. Both are fuel?

Mr. PEABODY. Both are fuel; one human fuel and the other is machine fuel. Any laws that can be passed that will loosen up the reserve fuel and oil supplies of Alaska and the west coast should be adopted. We can not wait until we are whipped to open up those fields. We are sending our sons now; we are not sending them three, four, or five years from now; we must protect those sons; we must win this war; we can not win this war unless we utilize every process available. If it exhausted the coal of the United States or the oil of the United States to win this war, we must win this war. We must not hold back anything.

The west coast is in tremendous difficulties—is in the same situation as northeastern Canada in regard to the loss of men. The coast can only be supplied either from northwestern Canada or from the oil fields of California and the coal fields of the Rocky Mountains. The oil production is falling off very seriously in the West.

I think of oil mainly as tons of coal. If I say a falling off of 9,000,000 barrels of oil, I figure that 3,000,000 tons of coal have gone by the wayside. When I find an oil well can be drilled—and I have drilled them myself by the use of four or eight men—and possibly we might get 3,000 barrels of oil out of that well, meaning 1,000 tons of coal, and do it within 60 days, and I know it would take from 12 to 18 months, using 200 or 250 men, to develop any coal mine to the production of 1,000 tons of coal, and so I believe the emergency warrants the Government in using any possible means to get that thousand tons of fuel a day, whether it be in the nature of 3,000 barrels of oil or 1,000 tons of coal, out at any sacrifice.

Senator SHAFROTH. The question which has been in dispute in Congress has been the system by which this could be done.

Mr. PEABODY. Senator, I do not give a rap what your system is. I do not care whether you lease it to the men, sell it to the men, or do it yourselves, but get the stuff out. I have no interest in the method.

Senator SHAFROTH. The complaint has been the same in the West as you have described, only we say these lands ought not to be leased by the Government, but they ought to be sold at their fair valuation, and not at a valuation that is ten times higher than the property is worth.

Senator WALSH. I do not believe, Mr. Chairman, Mr. Peabody has really given any thought or study to that feature of the problem that is before you.

Mr. PEABODY. I was extremely interested, Senator Walsh, in regard to your statement in regard to the Kearney Coal Co. I am very heavily interested in the adjoining mine, the Monarch Coal Co.'s mine. The prices you quoted looked to me extremely satisfactory from a mine operator's standpoint, although I happen to know that the Burlington Railroad Co.'s contract, of which we took quite a large portion from our mine, was only 15 cents a ton this year over last year.

Senator PHELAN. You say the British Columbia mines are falling off?

Mr. PEABODY. Yes.

Senator PHELAN. Due to lack——

Mr. PEABODY. Due to lack of labor. I had some men who wanted to develop a new mine in Nova Scotia. I said, "Do not do it, because by developing that mine you are going to take miners away from active mines that can be producing their ton, two or three tons a day, and you can not develop this property within six months.

Senator **Walsh**. What drain is the Pacific coast making upon the Atlantic coast?

Mr. **Peabody**. The drains are that we are shipping every ton of coal we can possibly send via the Panama Canal to the west coast, and in addition to that we are supplying the Navy, and the coal shipped all rail takes, I think, 92 days' average time for a car to go from the Norfolk & Western or the Chesapeake & Ohio fields to California and return. It is a most horrible misuse of equipment that we need so badly for other purposes. The Southern Pacific wants 60,000 or 70,000 tons of coal a month. These papers came to me from the National Council of Defense. They asked me could I supply it; I mean by "I" whether the committee could supply it. I said, "No; it is impossible to supply that coal unless we take it from industries in which it is indispensable." We can, if we shut down possibly the steel mills in Colorado, if we shut down a great many industries that are large burners of coal, we could probably take that away from them and furnish it to the Southern Pacific.

Senator **Phelan**. Why is the Southern Pacific using coal? They have oil burners?

Mr. **Peabody**. But they can not get enough oil. Oil has fallen off in its production immensely.

The **Chairman**. What, in your opinion, would be the result if we should take up no new system and go on in the same old way and develop no more coal or oil than we are developing now?

Mr. **Peabody**. Why, from the oil standpoint we would be out of reserve oil in the United States within 12 months, and we would be producing approximately 50,000,000 barrels of oil—leaving out the Mexican supply, assuming that everything remained normal—50,000,000 barrels of oil per year less than needed.

The **Chairman**. Do you think we are producing enough coal and oil now to win the European war?

Mr. **Peabody**. No, sir.

The **Chairman**. If we can not increase our production we can not win the war?

Mr. **Peabody**. Yes, sir.

Senator **Phelan**. If more oil is developed in California, it will release these cars for transportation?

Mr. **Peabody**. It goes without saying that the more you can produce nearer the point of consumption the less transportation you are going to use, Senator Phelan.

Senator **Phelan**. How extensive is the shipment of coal you describe from the east to the west coast by rail?

Mr. **Peabody**. The shipment from the east to the west coast by rail, the only coal that is going is for battleships.

Senator **Phelan**. And that at a great cost?

Mr. **Peabody**. At a terrific cost. I located 8,000 tons of coke the other day. I have not been able to find out who it is going to, but 8,000 tons of coke going to California from the West Virginia field. It struck me when I saw that, "Why did they not take the coke from farther west; why did they not get the coke from Colorado?" Everything that I see that takes a car longer to accomplish its appointed task of taking its load of fuel to the consumer hits me in the face and I want to stop it, and when I saw this 8,000 tons of coke going from the West Virginia fields to San Francisco I wanted to find out why they could not take it from a point nearer the point of consumption, as you say.

Senator **Phelan**. And it does not go by ship because there are no ships?

Mr. **Peabody**. Well, we have no ships.

Senator **Phelan**. There is a collier now in European waters, was it not so reported the other day, that can not get home?

Mr. **Peabody**. That may be. I am loading this week five ships which the Government allotted to the Italian Government with coal.

Senator **Walsh**. You say some coal is going by way of the canal?

Mr. **Peabody**. Yes, Senator; some coal is going by the canal. But you should develop your coal and oil lands in Alaska, and you should develop your oil lands in every western State.

Senator **Shafroth**. Mr. Peabody, we passed an act here three or four years ago opening up the coal lands of Alaska under a leasing system. Do you know how much coal has been produced in Alaska under that?

Mr. **Peabody**. Very little under the leasing privilege. The Alaskan coals are the most speculative field we have on account of the great disturbances of the veins.

They are at all angles, and we go into a coal mine, for instance, I have forgotten the tract number, but where a lava dip comes in and cuts the coal out entirely, and no man in a commercial business is going to take a chance unless he can secure a lease or a purchase on some basis that is going to warrant his putting his money in. I have been studying these Alaskan coal leases. I see nothing particularly wrong in them, except they limit the territory to such a small area that no man can put the proper development in.

Senator **Shafroth**. Is it not a fact that people prefer to operate where they hold title; is it not a fact they will put more money into machinery?

Mr. **Peabody**. No; not necessarily, Senator.

Senator **Phelan**. And to develop a mine when their title is their own?

Mr. **Peabody**. Not necessarily. We operate, ourselves, under many leases. Take in the eastern fields where you have to pay $1,000 an acre, from $300 to $1,000 an acre, and you can not start under 2,000 acres of coal; it takes such a large amount of your capital that you prefer to pay royalties.

Senator **Shafroth**. You have, however, never operated under a governmental leasing system?

Mr. **Peabody**. I have not ever operated under any governmental reservations except in the sale of my coal.

Senator **Shafroth**. Do you recognize a great difference between private and governmental leasing?

Mr. **Peabody**. Oh, yes; tremendous. There are restrictions in governmental leases that are not in the private leases.

Mr. **Shafroth**. And is it not a fact that on account of not having the personal interest, they adhere so strictly to the lease that no waivers but forfeitures are continually being enforced?

Mr. **PEABODY**. I think the Government is getting very much more liberal in all its treatment of leases and development. I think it realizes that the Government has to accord and has to give the opportunities that a private individual will give; otherwise they can not get the development.

Now, these features that I have gone over with Dr. Manning, I think they are very much better than they originally were. There have been many changes made in them. I am not referring to Alaskan leases, particularly.

Senator **WALSH**. I wanted to ask you whether you were engaged in the coal business yourself.

Mr. **PEABODY**. Yes, sir; I am.

Senator **WALSH**. Where?

Mr. **PEABODY**. Illinois, Indiana, Ohio, Wyoming, Oklahoma, Virginia, and Kentucky.

Senator **WALSH**. You operate coal mines, do you?

Mr. **PEABODY**. I operate coal mines.

Senator **WALSH**. And sell, of course?

Mr. **PEABODY**. And sell coal.

Senator **WALSH**. How far west do you go?

Mr. **PEABODY**. Wyoming and Oklahoma.

Senator **WALSH**. You spoke about being interested in the Monarch in Wyoming.

Mr. **PEABODY**. I am interested in the Monarch at Sheridan, or near Sheridan.

Senator **WALSH**. What is your principal market?

Mr. **PEABODY**. We have got a good market up in the Deadwood country. There is a mine there owned by the Hearst family. They take most of our small coal, but we go through Montana, through all that same section that Mr. Carney goes through.

Senator **WALSH**. What would you say as to the likelihood of the Government being able to dispose of its coal lands in the West under a leasing system?

Mr. **PEABODY**. I think if you would loosen up some of your coal lands you would get immediate developments out of them, and immediate relief, although not as much relief as if you loosen up your oil, because you get oil in 60 days, and it takes 12 to 14 months to get coal.

Senator **WALSH**. Speaking about the Alaskan field, do you know whether there is any railroad into any Alaskan field?

Mr. **PEABODY**. The Government railroad will be completed into the Alaskan coal fields as soon as the coal fields can be developed, and Secretary Lane has already issued instructions—I saw the cable instructing the Alaskan Engineering Commission to at once proceed to develop the tract we have been discussing, what is called tract No. 12. My suggestion and advice being to proceed with the development, have the property ready for producing before the railroad got there; that if we waited until the railroad got there that would mean three, four, or five months' more delay. I said, "Start driving your tunnels and start developing your property," and they have started.

Senator **WALSH**. Do you understand they are actually engaged in developing under leases?

Mr. **PEABODY**. The cable has gone giving the instructions. I saw a copy of the cable, Senator.

Senator Walsh. It would be impossible, would it not, to produce any coal commercially without railroad transportation?

Mr. Peabody. Oh, absolutely; yes; but the Alaskan Railroad now has a branch down to a summer harbor and are building down the peninsula, so eventually they will have an all the year around harbor for the shipment of this coal from this field.

Senator Shafroth. Are there not some coal lands near the coast there?

Mr. Peabody. I am not as familiar with the geographical survey of Alaska as I should be.

Senator Walsh. Thirty miles is the nearest.

Mr. Peabody. On account of the quality of this coal being higher than almost all other Alaskan coal——

The Chairman. There are immense fields of coal in Alaska that are remote from railroads, are there not?

Mr. Peabody. Oh, tremendous; but this only takes about 25 miles of rail to get up to the mouth of the mine of this new pit. Am I not right, Dr. Manning?

Dr. Manning. Yes.

Mr. Peabody. And it will be finished within 60 or 90 days.

The Chairman. That will only be a very small part of the Alaskan coal, just one item?

Mr. Peabody. No; a very small part, but you have got to begin somewhere, Senator. We must begin getting our additional supplies, especially for that west coast.

Senator Shafroth. What is the length of that railroad now that is completed?

Mr. Peabody. Do you remember it, Dr. Manning?

Dr. Manning. No.

Mr. Peabody. I should say something like 150 miles.

Dr. Manning. That is approximately correct.

Senator Shafroth. And how far in is it to be built?

Mr. Peabody. To get into this particular coal field about 25 miles farther.

Senator Shafroth. Are there no coal fields within the 60-mile limit of the road now constructed?

Mr. Peabody. Yes; but the quality is not as high as the coal we are attempting to produce in this particular field I am discussing.

Senator Shafroth. Where were the so-called Guggenheim locations?

Mr. Peabody. They were canceled by the Government.

Senator Shafroth. Yes.

Mr. Peabody. I do not know.

Senator Shafroth. Do you know where they were, Dr. Manning?

Senator Walsh. They were in the Bering field, which is an entirely different section of the country. There is no railroad in the Bering field and none contemplated just now. The railroad will tap what is known as the Matanuska field.

Mr. Peabody. It is the best field that is located.

Senator Shafroth. How far is that from the railroad?

Mr. Peabody. There is a railroad in there now. We are building up through that field now. The whole 25 miles is practically open coal field.

The Chairman. Is there anything else you wish to say?

Mr. Peabody. No, sir; I am very glad of the opportunity to have been heard.

Senator Shafroth. I should like to ask one or two more questions, please.

The Chairman. Yes.

Senator Shafroth. Your remarks were applicable more to the situation in the East than in the West, were they not?

Mr. Peabody. Yes; my remarks were in regard to the ability of production in the East rather than in the West. The West is getting worse all the time.

Senator Shafroth. Your theory is that to develop new fields in the West would not relieve the situation, but would take men away from the East and put them——

Mr. Peabody. No, Senator; I think there should be new fields developed in the West, but not in the East, for the simple reason that the western fields are going out so fast that something has got to be done to replace them, either by the development of oil or coal. The eastern fields—I protested against any new mines going down in the eastern fields because it takes active miners away from producing the ton or two or three, the average per capita they can produce daily, into development that will take 12 months to begin any production, but in the West the situation is almost reversed.

Senator Shafroth. Would not those miners be reduced in number, and is there not a scarcity of miners even now in the West?

Mr. Peabody. I do not think there is a scarcity of miners. Of course eventually we have got to get more laborers in of all kinds.

Senator Shafroth. In the entire United States?

Mr. Peabody. Yes, sir. There were a lot of Mexicans coming over from the border. I think perhaps the effort to restrict was not as great as it had been, and seven thousand or eight or ten thousand Mexicans came over, but the Bureau of Immigration immediately stopped it. Still, if they could only have let them come over we would have been getting out a lot more coal, and I, not being one of those whose duty it is to restrict immigration, looked with acquiescence on their coming.

Senator Shafroth. Have you looked into the question as to whether under the governmental leasing system the price of coal is higher or lower than under an entry system?

Mr. Peabody. Oh, I do not think it would make a particle of difference either way, Senator.

Senator Shafroth. Is it not a fact that under the ownership of coal lands we have produced in the West Virginia fields coal at a lower price than any point in the entire world?

Mr. Peabody. Yes; but that does not have anything to do with the ownership. It only had to do with the vein. In the West Virginia fields we have a 9-foot vein of coal that they could drive a wagon in and load it on the wagon and could produce coal with nonunion labor for 40 to 50 cents a ton. When I began my business the first contracts I took were 50 cents a ton at the mines for coal. My coal was not costing to produce more than between 25 and 30 cents a ton.

Senator Shafroth. Yet they have been for the last four or five years furnishing coal at the mouth of the mine at 90 cents a ton?

Mr. PEABODY. Yes; within the last two years; but that had nothing to do with lease or ownership, Senator.

Senator SHAFROTH. That depends. There have been other countries that have adopted the other system. Is there a single other country that has produced coal at less than $2 a ton at the mouth of the mine?

Mr. PEABODY. That has nothing to do with lease or ownership. That is the practical cost of production. Take Belgium or Germany or France. There they are going down into deep mines and mining coal from 18, 24, or 36 inch veins, while in our great West Virginia fields and great Illinois fields we have 8 or 9 foot veins of coal. It is not mining; it is just shoveling. They have no such conditions abroad.

Senator SHAFROTH. Is it not a fact that we have got, outside of this condition that is now congesting things—is it not a fact that we have the cheapest coal in all the world by long odds?

Mr. PEABODY. Absolutely; we have the cheapest production of coal in the world.

Senator SHAFROTH. And have had for years and years?

Mr. PEABODY. And have had for years and years and have used it like drunken men. We have wasted our substance by taking the nearest coal because we could produce it cheapest. We have had no thought of conservation of life. We kill three men in this country for every one man killed on the other side, with more dangerous mining conditions on the other side.

Senator SHAFROTH. Three to one on account of not having inspection?

Mr. PEABODY. On account of having not one thought of either the conservation of life or the mineral resources that are in the ground or of the capital invested. There is no industry that needs so much general national laws as the coal industry. There are no two States in the United States which have similar laws in regard to mining. Instead of taking out 90 per cent of the coal in the ground we are taking out hardly 60 per cent, leaving the rest to be wasted and no future generation can get it, while it would be just as economical and cheaper to take out the 90 per cent, but you have got to wait five or six years for a return on your investment, and we want to get the dollars back the moment we put the dollar in.

Senator HUSTING. What laws do you think ought to be enacted in regard to requiring the taking out of coal—I mean the percentage?

Mr. PEABODY. I should be very glad, indeed, Senator, to submit my thoughts on that subject very carefully, because I have lectured on conservation. I have dreamed conservation. I can see this waste today. We are taking only 60 per cent of coal out of the ground; then after that the consumer wastes over 50 per cent of that. We are not getting 20 per cent of the heat units that are in the ground into use.

Senator SHAFROTH. If you were to pass a law that would be general through the United States, genearl with regard to that matter, would it not raise the price of coal by requiring you to do work that does not pay you?

Mr. PEABODY. It should reduce the price eventually. It would raise the price immediately, because we should have to go from our present wasteful methods of mining to correct methods of mining and put off our returns on our capital three or four years. But, Mr.

Senator, eventually it would reduce the cost of coal production from 10 to 20 per cent.

Senator SHAFROTH. That would be very wise, but you would have to get a constitutional amendment in order to do that. That would be the only thing.

Mr. PEABODY. I do not like Government paternalism, but I think we need it to preserve what we have got in the ground that God put there, that we did not have anything to do with putting there, and which is needed for the use of all the people.

Senator SHAFROTH. You do not regard the coal supply of the world now as anywhere nearly exhausted?

Mr. PEABODY. The coal supply of the United States, from the bituminous standpoint, has not even been scratched. The anthracite has, but the bituminous has not been scratched.

Senator STERLING. What do you say as to the increased price of coal, Mr. Peabody, aside from what Senator Walsh has said about the increased price in Montana?

Mr. PEABODY. The causes?

Senator STERLING. Yes; first, as to the increased price itself, as to what extent the price has been increased within the last couple of years.

Mr. PEABODY. The prices have been increased approximately during the last 12 months 100 per cent; the cost has increased about 20 per cent.

Senator STERLING. You say the price of coal has been increased 100 per cent within the last 12 months?

Mr. PEABODY. Yes.

Senator STERLING. The price of anthracite coal?

Mr. PEABODY. No; bituminous coal. I am not talking about anthracite.

Senator STERLING. And very little increase in anthracite?

Mr. PEABODY. Very little. They are perhaps more decent than we bituminous men.

Senator WALSH. Can you tell us about what the Navy is paying?

Mr. PEABODY. They are not paying anything yet, Senator. They have not made up their minds. They have been offered coal at $2.95 at the mines as against a cost to them at $1.45 last year, just about 100 per cent increase, and that is about 100 per cent below the present market, at that.

Senator WALSH. That is what I was going to inquire of you.

Mr. PEABODY. The present market on that grade of coal is between $5.50 and $6. They have been offered it at $2.95. A year ago it was selling for $1.50.

Senator STERLING. To what do you attribute this enormous and unwarranted rise in the price of bituminous coal?

Mr PEABODY. I attribute it either to the successful manipulation of the fears of the public by the coal operators; I think that is it more than anything else. I think the public have gone crazy. They think they will not get coal, and they are trying all to get it at the same time and bidding each other up. Go down to Altoona, where there are a lot of small coal mines, and there is a regular slave market every morning. The small operators come in with 1, 5, 8, or 10 cars of coal and the New England buyers are down there. One will say, "I will give $5.". A dealer will say, "I will give you $6." Another will say, "I will give you $6.50"; another, $7. Now, it is human nature to take the $7.

Senator WALSH. Apparently these men are manufacturers running other industries consuming coal, as they are apprehensive they will be short.

Mr. PEABODY. Yes; they are apprehensive; and if they will leave us alone there need not be one fear in anybody's mind that the great Central West, the West, and the East, and the allies, and all the requirements will be taken care of, because they will; but if everyone stays in a panic, it is like a bank that could not pay every dollar in a day that it owed. We can not deliver every ton of coal in a month that they want in six month; but give us time and get over this panic, and these prices will go down $2 a ton automatically. The railroads are doing wonderful work, and so, gentlemen, are the coal men in getting the coal out.

Senator HUSTING. Will you be good enough to submit your ideas on that question I put to you?

Mr. PEABODY. I shall be delighted to do it. I have been trying two or three years to see if I could not get up into the higher realms of legislation and possibly get something adopted that will be a help to this great industry I am in. I shall be very glad to submit what I think would be the fundamental necessities of a bill to conserve, first, life; second, the resources in the ground; and, third, the capital invested.

The CHAIRMAN. Put it in writing, Mr. Peabody, and it will be inserted in the hearings.

Mr. PEABODY. I am going to take a good deal of time to do that.

The CHAIRMAN. Prepare it whenever you get ready.

Mr. PEABODY. I will. This is the first opportunity I have of doing that.

Senator HUSTING. There is one further question I should like to ask you. It is in regard to what you said about the proposition of opening up new mines in Nova Scotia and that they determined that they needed the man power more than the coal.

Mr. PEABODY. No; they needed the man power for producing the coal daily rather than six or eight months from now.

Senator HUSTING. Yes; to devote that labor to mines already developed and producing?

Mr. PEABODY. Yes, sir.

Senator HUSTING. I was going to ask you why that same reasoning would not apply to all the United States.

Mr. PEABODY. It does, except to the West where the mines are going out.

Senator HUSTING. And that is on account of the cost of transportation, is it not?

Mr. PEABODY. No; but the mines are going out. There is a greater demand in the West, and the present mines are becoming exhausted.

Senator WALSH. Let me say that the way Mr. Kelly put it to me was that they had plenty of land with coal in it, but it was expensive to get at it and needed large development, whereas there were coal lands immediately adjacent where the coal——

Mr. PEABODY. That had not been exhausted.

Senator WALSH. And of very much larger production; we should get it from those rather than from the lands open?

Mr. PEABODY. I think, Senator Walsh means there are adjacent coal lands, adjacent to the present openings and that all that has to be done is to extend the present entries into these adjacent lands, but the Government will not let you do it.

Senator HUSTING. I see.

Senator SHAFROTH. You spoke about the coal deposits not being hardly scratched, as you say?

Mr. PEABODY. Yes, sir.

Senator SHAFROTH. Is that true in the eastern as well as the western portion?

Mr. PEABODY. Yes, sir.

Senator SHAFROTH. So far as quantity of coal is concerned anywhere in the United States it is in the ground?

Mr. PEABODY. Oh, yes.

Senator HUSTING. Unless these coal lands are adjacent to working mines it is your idea, is it, that, as far as the present emergency is concerned, the best results could be obtained by putting what surplus labor we have into the mines already working?

Mr. PEABODY. Yes, Senator; but the solution, I think, of the western problem is the quick development of oil for fuel. It can be done so much more quickly.

The CHAIRMAN. We thank you, Mr. Peabody. We will now hear Dr. Manning.

STATEMENT OF DR. VAN. H. MANNING, DIRECTOR BUREAU OF MINES, WASHINGTON, D. C.

Dr. MANNING. Mr. Chairman and gentlemen, Mr. Peabody has very thoroughly covered the coal situation. I do not know that there is anything I could add to what he has said unless there are some particular questions you would like to ask.

I should like to deal with the petroleum, potash, and phosphates. The latest word on that, so far as the Geological Survey and the Bureau of Mines are concerned, was incorporated in a report submitted to Mr. Baruch, chairman of the committee on raw materials, minerals, and metals, Council of National Defense, on May 24, 1917, which emphasizes the statement which Mr. Peabody has already made, that the situation, so far as oil production in the United States is concerned, is critical.

The CHAIRMAN. That report is from whom?

Dr. MANNING. Report of the Directors of the Geological Survey and Bureau of Mines.

The CHAIRMAN. Can you furnish a copy of that to the stenographer to put in the record?

Dr. MANNING. I shall be very glad to do so.

A consideration of the present status of the petroleum industry in the United States and the intimate relation to the progress of the war brings forcibly to the mind of a close observer, first, that our allies must have petroleum in increasingly large quantities; second, that the United States must furnish the bulk of it; and, third, that the country is facing a shortage in petroleum and some of its products. And in this report I have dealt with the different fields—for instance, the Appalachian field. There is a possibility of increasing that field by 1,000,000 barrels. Take the Lima-Indiana fields, that was decreased in 1916 by 365,000 barrels. The Illinois field last year, was decreased by probably 1,000,000 barrels. And so it goes through the different oil-producing States.

Senator Shafroth. How about the Oklahoma field?

Dr. Manning. The marketed oil production of the Oklahoma field was increased last year by 7,000,000 barrels, and will probably be reduced this year by 10,000,000 barrels.

I have a summary here showing the production of the fields in 1916, the estimated decrease or increase in barrels of the production in 1917. In the Appalachian the production was 24,000,000 barrels; no increase or decrease is estimated during this year. The production for 1917 therefore will remain at 24,000,000. In the Lima-Indiana field for 1916 the production was 4,000,000 barrels; an estimated decrease of 300,000 barrels which would make the production this year 3,700,000 barrels. The Illinois production in 1917 was 17,500,000 barrels; the estimated decrease 1,000,000 barrels, making the production for 1917 16,500,000 barrels. In the Mid-Continent fields the production in 1916 was 111,500,000 barrels, estimated decrease, 10,000,000 barrels, making the estimated marketed production in 1917 101,500,000 barrels. In the north Texas and Caddo fields the production in 1916 was 20,300,000 barrels, no estimated decrease or increase; therefore the production in 1917 will be the same. In the Rocky Mountain field the production in 1916 was 6,490,000 barrels, estimated decrease or increase, none; production in 1917, 6,490,000 barrels.

Senator Sterling. That includes Wyoming, does it not?

Dr. Manning. Yes, sir.

Senator Sterling. Have you Wyoming separately?

Dr. Manning. I have not those figures. They are just grouped into different oil fields, but I could get those figures; we have them compiled at the office.

California production in 1916 was 91,000,000 barrels; estimated increase at 2,000,000 barrels; production in 1917, 93,000,000 barrels. This summary shows a total production in 1916 of all the oil fields of 296,290,000 barrels, a decrease in 1917 of 9,300,000 barrels, or a total production in 1917 of 286,990,000 barrels, which goes to show we are depleting our resources.

I have another table here, which is a summary of these statements which preceded it, which will go in the record. It shows the decline in stocks. These are in production. I have covered the same fields, and I will give you the total number, the total decline in stocks in all these fields is 14,500,000 barrels—that is, five months' decline in our stored oil—and the marketed production is 286,990,000 barrels; pipe-line stocks, 150,600,000 barrels. Barrels to be drawn from stocks during 1917 at present rate of consumption and production are 43,810,000 barrels. Stocks remaining December 31, 1917, 106,790,000 barrels, and the date stocks will be exhausted at the same rate of production and consumption is June, 1920; at that time we would have no oil in storage at all.

Senator Husting. How does that compare with the storage for the years preceding the years you gave, the average amount of stock?

Mr. BEAL. I think the stocks for the last part of 1916 were about the same as two years preceding, but during the middle part of 1915 the stocks were much higher than ever before.

Senator HUSTING. How were they before, five or six years preceding that?

Dr. MANNING. They were lower.

Senator HUSTING. Then it increased and is now lowering again?

Dr. MANNING. Yes; the highest part was about June, 1915.

Senator SHAFROTH. When were the large reservations made for the Navy in these western lands, do you remember?

Dr. MANNING. I think that was four or five years ago.

Senator SHAFROTH. I think 1910.

Mr. GILLETTE. The first one was in 1912.

Senator HUSTING. It was drawn by President Taft in 1909.

Mr. GILLETTE. The naval reservations.

Senator SHAFROTH. The naval reservations lasted six months from the time stated.

Mr. GILLETTE. The first in 1912, the second in December——

Senator HUSTING. These reservations were only designated as naval reservations?

Dr. MANNING. Withdrawals were made in 1909.

Mr. GILLETTE. The first withdrawal was made September 27, 1909.

Senator HUSTING. That was withdrawal of the lands, in so far as its effect on oil production was concerned, dated that day?

Mr. GILLETTE. No; because they continued work right along and the development of wells, and were spending millions of dollars; and only about three years ago they commenced shutting down. The Government permitted the wells to go on; wells were drilled and there was great activtiy for four or five years, and after they built up this great big property and spent all these millions of dollars then came the naval reserve right on top of them and then everything stopped.

Senator HUSTING. The same legal status remained?

Senator SHAFROTH. There was a Supreme Court decision a little over two years ago that held that reservation made by President Taft was a valid reservation and applied to persons who had located previous to a certain time, and that is what made the stoppage of the oil development.

The CHAIRMAN. You may proceed, Dr. Manning.

Dr. MANNING. I should like to speak regarding the Mexican situation.

Senator WALSH. Before you go to that, you were speaking about the western situation. Have you got figures there showing the aggregate oil reserved now in the West; that is, the aggregate acreage of lands believed to be oil-bearing that are withdrawn from entry?

Dr. MANNING. I do not have those figures with me, Senator. I did not bring those figures up, but I will put them in the record if you would like to have them.

Mr. GILLETTE. I can tell you, Senator, about what it is.

Senator WALSH. I thought the doctor had the figures.

Dr. MANNING. We have maps with us.

Senator HUSTING. I should like to have you put in the figures, if not too much trouble, as to the amount of stock, say from 1910 down to the present time.

Dr. MANNING. Yes, sir; I will do so.

Pipe-line stocks at end of 1910 was 131,030,000 barrels; 1911 was 138,240,000 barrels; 1912 was 122,870,000 barrels; 1913 was 128,000,000 barrels; 1914 was 148,000,000 barrels; 1915 was 162,000,000 barrels; 1916 was 150,500,000 barrels. (Figures from U. S. Geological Survey.)

Senator Husting. And in connection with that, I want your idea on this proposition: Whether this increased storage of oil was not due to the decrease of demand for oil in these lean years—1914 and 1915?

Mr. Naramore. Largely to that and to overproduction.

Senator Walsh. It would be well, then, would it not, to give the stock on hand and give the production and consumption.

Dr. Manning. Yes; I have those figures in this report I have right here. I will not give them in full, but put them in the record so it will be complete.

I should like to speak particularly now in reference to the situation in Mexico. The production from Mexico, the annual production last year, was about 42,000,000 barrels, of which the United States got about 32,000,000, leaving about 10,000,000 barrels to be disposed of otherwise. If the Mexican supply should be cut off, we would have to furnish this year over last year about 42,000,000 barrels increase.

Senator Sterling. How does that compare with previous years' production in Mexico; you say last year it was about 42,000,000?

Dr. Manning. I do not have those figures, but I can get them and put them in the record, too. (Mexican production supplied: 1913, 15,575,000 barrels; 1914, 26,325,000 barrels; 1915, 38,655,000 barrels.)

Senator Phelan. You say the total production of Mexico was 42,000,000; of that the United States took how much?

Dr. Manning. 32,000,000 of the 42,000,000.

Mr. Naramore. That is the total export. The production is larger. They can produce a million barrels a day there.

Dr. Manning. 42,000,000 barrels export and the United States received 32,000,000 barrels.

Senator Shafroth. What is being produced in Mexico?

Dr. Manning. I have not the total production figures with me.

Mr. Naramore. The storage, I think, is about filled up, and their potential production is about 1,000,000 barrels a day, and they will only produce what they can get exporting bottoms for—that is, every barrel they can get out by ship, they ship.

Senator Shafroth. Then the failure to send is not due to production but to shipping facilities?

Dr. Manning. No; the production is unlimited. It is about 1,000,000 barrels per day.

Senator Phelan. Are they storing it there?

Dr. Manning. They are; with all the facilities they have. It is not safe to store too much. They are suppressing production and development.

Senator Shafroth. What is the total production of the world in oil? Have you got that?

Dr. Manning. We can get those figures, Senator. I have not got them here. (Supplied by Dr. Manning: World's production 427,695,347 barrels in 1915.)

Senator Shafroth. How does the production of the entire United States compare with the production in Mexico?

Dr. **Manning.** The production of the United States is about 300,000,000 barrels a year.

Senator **Shafroth.** But the production of 1,000,000 barrels a day would be 365,000,000 barrels a year?

Mr. **Naramore.** They produce that if provided with a market and transportation facilities.

Senator **Shafroth.** How does the price down in Mexico compare to our price here—take it in American money?

Senator **Phelan.** Is there much use for oil in Mexico?

Mr. **Naramore.** Not comparatively speaking. It is principally used on the railroads. The price is enhanced by an export tax on the part of the Mexican Government, plus a shipping tax (bar charge.) With these various taxes, when it reaches Texas it is about equivalent to the price of Texas-produced crude oil.

Senator **Husting.** How much tax does it put on oil a barrel—the total?

Mr. **Naramore.** I would not care to give that offhand, but we can give you that.

Senator **Phelan.** Is that included in the recent Carranza order?

Dr. **Manning.** Yes; May 1.

Senator **Phelan.** That was published in a paper.

Mr. **Naramore.** In the Mexican Review of June, 1917.

Senator **Phelan.** It was published in a paper exploiting Mexican affairs and I received a copy; I supposed other Senators also received it.

Dr. **Manning.** If there are no further questions on the oil industry, I will take up the question of potash, and that is included in this report here made to the Council of National Defense.

Senator **Phelan.** Have you any criticism of the Carranza order?

Dr. **Manning.** Senator, I have not read it very carefully.

Previous to the war there were imported into this country from Germany, in the form of potash salts, approximately 250,000 tons of potassium oxide, which was used largely in agriculture. The embargo of January, 1915, cuts off all imports of potash from Germany. The price of potash immediately rose so that the price, which at the beginning of the war was from $30 to $40 per ton, rapidly mounted to $450 per ton. Stocks of potash accumulated before the war have disappeared entirely. Approximately 95 per cent of our consumption of potash salts is used for agriculture; the remainder is used in the various chemical industries. The chief uses are as follows: Nitrate for gunpowder, meat preservatives, and fertilizers; carbonate for hard glass and soft soap; cyanide for extracting gold and silver from their ores; sulphate for fertilizer, alum, and hard glass; chlorate for explosives and fireworks; chloride for fertilizer, and manure salts and kainite for fertilizer.

The largest new deposit of potash salts is in San Bernardino County, Cal. I do not know whether this committee wants any information concerning that or not.

Senator **Shafroth.** Yes; we should like it.

Dr. **Manning.** Conservative estimates of the Geological Survey gives the available potash in brine, which may be pumped, at about 10,000,000 tons. I understand that this bill proposes to release those lands for development.

Senator PHELAN. You are referring now to public lands?

Dr. MANNING. Yes, sir.

Senator WALSH. That would furnish a domestic supply for how long at the current rate of consumption?

Dr. MANNING. I am sorry, Senator, I have not those figures with me. Mr. MacDowell, of the Armour Fertilizer Co., is here at the request of the chemistry committee. You requested Dr. Nichols to be president, but he could not come, and he asked Mr. MacDowell or Mr. Pennock, and they will probably be able to give you the information.

Senator PHELAN. You estimate that in that deposit there is 10,000,000 tons?

Dr. MANNING. Ten million tons.

Senator PHELAN. And the production now is selling at $450 a ton?

Dr. MANNING. Yes, sir.

Senator PHELAN. What is the condition of litigation affecting the title?

Dr. MANNING. That I can not tell you, Senator.

Senator PHELAN. It is still an open question, is it not?

Senator WALSH. Yes; there is a contest, Senator, as I understand it. Certain parties claim to have acquired title by locations—placer locations—and the validity of those locations is in contest. If those locations are out of the way, there is a reservation covering it, and no law by which the property can be appropriated or developed.

Senator PHELAN. Then, what is the title of the Trona company?

Senator WALSH. I do not know. My understanding is the department has ruled against that.

Senator PHELAN. I have seen them operating. They have a fine plant at San Pedro. They are taking out the liquod potash, as I understand it, and refining it there.

Dr. MANNING. I have only a word more to add.

Senator WALSH. Just a word about the potassium. Is there any other source of supply except the Searles Lake?

Dr. MANNING. There are other sources by steel plants, by-products of blast furnaces, cement plants, etc.

Senator WALSH. I mean natural deposits?

Dr. MANNING. There is some up in Nebraska.

Senator WALSH. Senator Hitchcock tells me they are carrying on some operations in the western part of his State now, reclaiming from alkali beds and other deposits of that character.

Dr. MANNING. Yes, sir.

Senator WALSH. Has the Geological Survey any information concerning any other deposits than those in western Nebraska?

Dr. MANNING. I think not.

Senator WALSH. Are you not endeavoring to recover from shale beds in Utah?

Dr. MANNING. Yes, sir.

Senator WALSH. Can you tell us what progress is being made?

Dr. MANNING. That is the Alunite. Mr. McDowell is president of that company; he can give you the information himself.

There is just one word I want to say in reference to the phosphates which has a very important bearing on the utilization of the large amounts—thousands of tons—of sulphates which has been going to waste in the sulphur fumes, for instance, in Anaconda. If they can get some relief through this bill, they can develop the phosphate rocks of the West and use it for fertilizer purposes. I do not consider this feature of the bill as important as the coal, or the oil or gas, or the potash.

The CHAIRMAN. Is there being no phosphate produced at all?

Dr. MANNING. There are large deposits of phosphates in the East, in Florida and Tennessee.

The CHAIRMAN. None in the West, however?

Dr. MANNING. Practically none developed commercially. Some experimental work has been carried on by the Anaconda Copper Co. This company got a permit from the Secretary of the Interior to develop some lands contiguous to their smelter at Anaconda, and have been getting some good results from it.

The CHAIRMAN. There are large deposits up there, are there not?

Dr. MANNING. Yes, sir.

The CHAIRMAN. Is there anything else?

Dr. MANNING. I think that concludes it all, unless there are some questions.

(The report to Hon. Bernard Baruch, referred to above, is here printed in full, as follows:)

MAY 24, 1917.

Hon. BERNARD BARUCH,
Chairman Committee on Raw Materials, Minerals, and Metals,
Council of National Defense, Washington, D. C.

DEAR MR. BARUCH: In accordance with your request for a report on the present status of the petroleum, potash, and phosphate industries, with respect to supply and demand in connection with the Ferris bill, we submit the following conclusions which are based on the best information available at this date:

PETROLEUM.

A consideration of the present status of the pertoleum industry in the United States and its intimate relation to the progress of the war brings forcibly to the mind of a close observer, first, that our allies must have petroleum in increasingly large quantities; second, that the United States must furnish the bulk of it, and third, that the country is facing a shorage in petroleum and some of its products. By considering the number of wells drilled, the initial production of the wells, and the past monthly production, the following estimates have been made of the production for 1917:

APPALACHIAN FIELD.

There is very little possibility of an increase in the production of this field, unless more transportation facilities are provided for the new Kentucky fields, in which case the production of the Appalachian district may be increased by 1,000,000 barrels.

LIMA (IND.) OIL FIELD.

The production of this field declined 8¼ per cent during 1916, and an increase in the 1917 production is unlikely. The field during 1916 produced about 4,000,000 barrels.

ILLINOIS FIELD.

There is very little possibility of increasing the 1917 production in Illinois, and it will probably be reduced 1,000,000 barrels this year.

MIDCONTINENT (KANSAS-OKLAHOMA) OIL FIELD.

Present information indicates that the production in 1917 for Kansas and Oklahoma will be approximately 10,000,000 barrels less than it was in 1916.

NORTH TEXAS FIELDS.

The pools on this district will hold their own and may exceed the 1916 production by 2,000,000 barrels.

CADDO FIELD (LA.).

Production here will probably be reduced 2,000,000 barrels.

GULF COAST FIELD.

Production will probably be about the same in 1917 as it was in 1916.

ROCKY MOUNTAIN FIELDS.

Wyoming is the only Rocky Mountain State with a greater potential supply of petroleum than is now being utilized and this supply is tied up by the present inadequate transportation facilities and the status of the public lands. Under present conditions the production in 1917 will probably be about the same as in 1916.

CALIFORNIA FIELD.

Present production figures, high prices, and the fact that California has produced 31,600,000 barrels of crude during the first 4 months of this year, indicate an increase of about 2,000,000 barrels over the production of 1916, which will not, of course, offset the 12,000,000 barrels that will be taken from storage.

Summary.

Field.	Marketed production, 1916.	Estimated decrease or increase in barrels.	Marketed production, 1917 (estimated).
Appalachian	24,000,000	None.	24,000,000
Lima-Indiana	4,000,000	−300,000	3,700,000
Illinois	17,500,000	−1,000,000	16,500,000
Mid-Continent	111,500,000	−10,000,000	101,500,000
North Texas and Caddo	20,300,000	None.	20,300,000
Gulf Coast	21,500,000	None.	21,500,000
Rocky Mountain	6,400,000	None.	6,400,000
California	91,000,000	+2,000,000	93,000,000
Total	296,200,000	−9,300,000	286,900,000

This estimate shows a reduced yield for 1917 of 9,300,000 barrels.

It must be borne in mind that these estimates are based on the meager information available at this time, and the bringing in of a good pool in any district would naturally change the estimates for that district.

STOCKS.

Appalachian and Lima-Indiana fields.—The stocks (all grades) in these two fields held by pipe-line and transportation companies have decreased from 10,900,000 barrels at the end of March, 1916, to 9,700,000 at the end of March, 1917. There is no possibility of increasing the stocks in these fields as long as the pipe-line facilities from Kentucky continue inadequate to take care of Kentucky's flush production, otherwise stocks may build up slightly.

Illinois.—Pipe-line stocks of oil in Illinois at the end of December, 1915, amounted to 11,300,000 barrels. At the end of December, 1916, stocks amounted to 6,600,000 barrels, a net decrease of 4,700,000 barrels, or more than 40 per cent. Because of Illinois's declining production, a further decrease in Illinois stocks is much more likely than an increase.

Midcontinent field (Kansas-Oklahoma).—These two States have furnished our greatest reserve supply of crude oil. According to available statistics, the pipe-line stocks in January, 1916, amounted to more than 83,000,000 barrels. By May, 1916, they had decreased to less than 81,000,000 barrels, but in July of that year they reached the high-water mark of more than 86,000,000 barrels. Since that date the stocks have gradually decreased until less than 82,000,000 barrels were held in storage at the end of March, 1917. There is very little possibility of increasing the midcontinent stocks because of the decline in production and the increased use of oil and its products.

Caddo (La.) and North Texas.—The pipe-line stocks in these two fields combined had built to their highest point in May, 1916, when they approached 11,000,000 barrels. From that date the stocks have gradually decreased, and at present they amount to 8,600,000 barrels. There is small chance of any considerable increase of stocks in these two districts, and it is very likely that more oil will be drawn from storage each month, especially during the coming summer.

Gulf coast field.—The stocks in the Gulf coast field exceeded 11,000,000 barrels in May, 1916, but from that date decreased quite rapidly, and at the end of December, 1916, amounted to 9,600,000 barrels. Stocks will probably not increase.

Rocky Mountain fields.—The amount of oil held in storage in Wyoming and Colorado has never reached a million barrels, and it is thought that this field will not in the future produce sufficient oil in excess of refining capacity to cause a substantial increase in the stored reserve.

California.—The pipe-line stocks in California have been drained more severely than in any other field in this country, as they have declined from 60,600,000 barrels in June, 1915, to 39,600,000 barrels at the end of March, 1917, or a decrease of 21,000,000 barrels in 21 months. This is a decline of nearly 35 per cent. The production in California is consistently averaging about 8,000,000 barrels a month, and the oil consumption is as consistently averaging over 9,000,000 barrels a month, or more than 1,000,000 barrels being drawn from storage each month. Under present conditions it is unlikely that the crude-oil stocks in California will increase.

The United States.—The total stocks held by pipe-line companies at the end of 1916 amounted to 150,500,000 barrels, or a decline of 20,000,000 barrels since July, 1915, when the total pipe-line stocks amounted to more than 170,000,000 barrels.

The following summary of the apparent supply of petroleum in this country and the estimate of the length of time it will last is based on the rate of decline in stocks for the last half of 1916 and on the assumption that the demand will not increase during the year.

Summary.

Field.	Decline in stocks from June 30, 1916, to Dec. 31, 1916.	Per cent for six months' decline.	Marketed production for 1917 (estimate).	Pipe-line stocks Jan. 1, 1917 (estimate).	Barrels to be drawn from stocks during 1917 at present rate of consumption and production.	Stocks remaining Dec. 31, 1917 (estimated).	Date stocks will be exhausted at same rate of production and consumption.
	Barrels.		*Barrels.*			*Barrels.*	
Appalachian, Lima-Indiana	400,000	2.5	27,700,000	9,700,000	800,000	8,900,000	Jan., 1927
Illinois	1,600,000	12.5	16,500,000	6,600,000	4,200,000	2,400,000	June, 1918
Mid-Continent	[1]4,700,000	5.0	101,980,000	82,000,000	21,280,000	60,720,000	Oct., 1920
North Texas and Louisiana	2,100,000	19.5	20,300,000	8,600,000	4,200,000	4,400,000	Feb., 1918
Gulf Coast	1,100,000	10.5	21,500,000	9,300,000	2,200,000	7,100,000	Feb., 1921
California	7,200,000	14.0	98,000,000	43,600,000	12,400,000	31,200,000	June, 1920
Total United States	[1]14,300,000	9.0	285,980,000	150,600,000	43,810,000	106,790,000	June, 1920

[1] Five month's decline instead of six.

(It should be noted that the above statistics are based on stocks held by pipe-line companies and do not include field storage.)

IMPORTS.

In 1916 Mexico exported some 42,000,000 barrels of crude oil, of which considerably more than half was shipped to the United States. Should Mexico assume a strict neutrality basis toward the warring countries it would mean that the United States would have to supply to itself and its allies an additional 42,000,000 barrels of crude, which is equivalent to more than 14 per cent of the total estimated marketed production for 1917.

NORMAL DEMAND.

The normal domestic demand for crude oil embraces the refining needs and the needs for fuel. The most important product of the refineries is gasoline for our fast increasing thousands of automobiles and other gasoline-consuming engines. On January 1, 1915, there were 1,750,000 automobiles in the country; on January 1, 1916, 2,225,000; and at the present time there are about 3,250,000 machines in operation. Trucks, farm tractors, motor boats, etc., also call for an increased fuel consumption, as each year new machines are added to the number already in use.

Fuel oil is use by the railroads, by the industries, merchant marine, and in the Navy. The railroads have rapidly adopted oil as fuel for locomotives because of its greater efficiency and its lower price as compared with coal. One railroad alone in California is using more than 1,000,000 barrels of fuel oil a month in its locomotives. Approximately 34,000,000 barrels of oil are used for annum by the railroads of the Pacific coast. The industries have been adopting fuel oil instead of coal because of its lower price, and the new battleships being built by the Navy are all equipped to burn oil as fuel.

Exports.—In 1916 we exported 62,000,000 barrels of petroleum and its products, of which 48 per cent was fuel oil, 14 per cent gasoline, 38 per cent kerosene, and 10 per cent lubricants.

ABNORMAL DEMAND.

The demand for crude oil and its products in this country will undoubtedly become much greater in the next few months on account of the entrance of the United States into the war. Gasoline and lubricants must be supplied to the hundreds of motor boats that will patrol the waters adjacent to our coasts, and fuel will be needed for the fleet now being built for service between this country and Europe. The work of mobilizing men and materials for the armies and their eventual transportation to the seacoast and to Europe will mean an enormously increased demand for petroleum and its products. All the industries requiring petroleum products will be generally speeded up and the demand for these products from the allies also will be increased.

RECAPITULATION.

The production for the year 1917 may be approximately 9,000,000 barrels less than it was last year. Should the Mexican supply be withheld (some 42,000,000 barrels), our total available supply would be reduced about 51,000,000 barrels.

The demand for crude petroleum will certainly greatly exceed that for 1916. Estimates for the normal peace consumption for 1917 have been made in the following table by computing the per cent increase for each of the last two years and assuming that the normal peace consumption for 1917 will increase at the same rate.

Table showing deliveries to the trade (consumption) during 1915 and 1916, with an estimate for normal peace consumption in 1917:

Year.	Consumption.	Per cent increase.	Production.	Drawn from stocks.
	Barrels.	*Pr. ct.*	*Barrels.*	*Barrels.*
1914	247,015,386			
1915	276,380,918	12	281,000,000	None.
1916	312,000,000	13	295,000,000	18,500,000
1917	[1] 353,000,000	13	286,000,000	67,000,000

[1] Based on a normal increase of 13 per cent.

Stocks Jan. 1, 1917—150,000 barrels.
Depleted by 1917, normal peace demand—67,000,000 barrels.
Stocks remaining, Dec. 31, 1917—83,000,000 barrels.

Attention should be called to the fact that the 1917 estimate in the above table is based on normal peace consumption. Figures are not available to show the increased demand due to the war or increased exports to the allies, but with the many additional uses to which gasoline will be put, such as fuel for the patrol boats, the demand for petroleum and its products will probably be larger by 20,000,000 barrels than the estimated consumption given in the above table.

It requires no deep thought for anyone to realize the seriousness of the petroleum situation, when the total reserve stocks on December 31, 1917—seven months hence—under certain conditions may not greatly exceed 50,000,000 barrels, which is only about two months' consumption.

The situation may be summarized in round numbers, as follows:

	Barrels.
Supply:	
Estimated decrease in production for 1917	9,000,000
Possible cessation of exports from Mexico	42,000,000
Total decrease	51,000,000
Demand:	
Estimated increase in normal consumption, 1917	41,000,000
Estimated increase above normal consumption due to war, 1917	20,000,000
Total increase	61,000,000
Total deficit, Dec. 31, 1917	112,000,000
Total stocks, Jan. 1, 1917	150,000,000
Total stocks, Jan. 1, 1918	38,000,000

(If the supply from Mexico is not interrupted this figure will be larger.)

These figures are, of course, based upon the assumption that refineries will be able to obtain all the crude oil they desire, which is an improbability. In fact, at the present time many refineries in the country are not running to full capacity on account of the scarcity of crude. As a large percentage of the total stocks in the country is held or controlled by a comparatively few, strong companies, it is not likely that a shortage such as indicated by the above figures will exist. In fact, such a condition of affairs will be prevented by the law of supply and demand. As soon as it becomes necessary to draw upon the reserve stocks to fill the demand, the stronger companies will refuse to part with their oil and the price will rise.

The calculations given above, which are based upon all the data of record in the Department of the Interior, show the present tendency of our supply and demand and make it of the greatest importance to take steps to meet the situation with no negative effects on the outcome of the war and with as little confusion as possible in our industrial life. Therefore, a greater production of oil is necessary.

POTASH.

Previous to the war, there were imported into this country from Germany, in the form of potash salts, approximately 250,000 tons of potassium oxide, or potash, which was used largely in agriculture. The embargo of January, 1915, completely cut off all imports of potash from Germany. The price of potash immediately rose so that the price which at the beginning of the war was from $30 to $40 per ton rapidly mounted to $450 per ton. Stocks of potash accumulated before the war have entirely disappeared. Approximately 95 per cent of our consumption of potash salts is used for agriculture; the remainder is used in the various chemical industries. The chief uses are as follows:

Nitrate for gunpowder, meat preservatives, and fertilizer.
Carbonate for hard glass and soft soap.
Cyanide for extracting gold and silver from their ores.
Sulfate for fertilizer, alum, and hard glass.
Chlorate for explosives and fireworks.
Chloride for fertilizer.
Manure salts and Kainite for fertilizer.

The amount used for military purposes is important, but we are able to secure the potash absolutely required for this purpose from the developments which have taken place in this country since the war, With the great incentive which has come from an increase of over ten times the original selling price of potash, several small sources of supply have been developed in this country. At the present time potash bearing material carrying from 20,000 to 25,000 tons of potash is being produced annually from domestic sources. This is but one-tenth of the country's normal requirements.

It is well known that in San Bernardino County, Cal., a deposit of potash salts occurs which contains by conservative estimates of the Geological Survey at least 10,000,000 tons of available potash in brine which may be pumped. Successful methods for separating the potash from this brine have been developed and are ready for extensive application. At the present time a plant built to produce 1,000 tons per month is operating on the only patented land on this deposit. The deposit has remained undeveloped solely because the material is located on Government land and title thereto can not be secured. The Ferris bill (H. R. 3232) now before Congress offers a real solution of the difficulty. If this bill passes, there appears to be positive assurance that the deposit will be immediately developed and that it is likely in time to contribute a large percentage of the normal requirements. Reliable companies that hope to develop this deposit under the bill above mentioned give reasonable assurance that they will be able to quickly double the country's potash production. This will aid in relieving next year's agricultural situation.

The importance of this production to the future resources of the country can not be overestimated. In my opinion, there is no emergency matter of more importance affecting the future supplies of our people. Potash is the only constituent required in fertilizer for the production of crops that we are not able to obtain in sufficient quantity for our needs.

The following recently published quotation of privy councilor of the German Empire, Wilhelm Ostwald, is of interest and has a direct bearing on the situation:

"America went into the war like a man with a rope around his neck, which is in enemy's hands and is pretty tightly drawn. With its tremendous deposits Germany has a world monopoly in potash, a point of immense value which cannot be reckoned too highly when once this war is going to be settled. It is in Germany's power to dictate which of the nations shall have plenty of food and which shall starve. Germany is in the position, often realized by Bismarck, to handle the long arm of the lever. The dearth of potash, as well as the ever increasing results of the U-boat war, is working in Germany's favor."

PHOSPHATE.

The Ferris bill has an important bearing on the phosphate situation. The production of our crops in the United States can be greatly augmented by an increase in the use of phosphatic fertilizer. The greatest deposits of phosphate rock in the world are situated in the Western States, especially Montana, Idaho, Utah, and Wyoming. Most of this rock is now unavailable, being held in the Government phosphate reserve.

In this same general locality thousands of tons of sulphuric acid are going to waste in smelter fumes—being not simply a loss of valuable material but a positive nuisance. It is believed that if the phosphate deposits can become available under proper lease, such as authorized in the Ferris bill, the sulphuric acid as well as the phosphate rock can be utilized for the production of fertilizer.

Until this phosphate rock is available, sulphuric acid must be wasted, owing to the insuperable transportation difficulties which can apparently be solved only in this manner.

Cordially, yours,

Van. H. Manning,
Director Bureau of Mines.
Geo. Otis Smith,
Director Geological Survey.

The Chairman. The committee will hear Hon. Charles A. Sulzer.

STATEMENT OF HON. CHARLES A. SULZER, DELEGATE FROM ALASKA.

Mr. Sulzer. Mr. Chairman and Senators of the committee, in the emergency which confronts the country at this time I think that all who are thoroughly familiar with the conditions existing in the

Territory of Alaska realize that the resources of Alaska are of vital importance in the prosecution of the war. During the calendar year 1916 the imports and exports of the Territory of Alaska amounted to $119,937,443.22. The exports consisted principally of food-fish products and copper ore and the rarer metals, all of which are of great importance in the prosecution of the war.

The per capita trade figures out to approximately $2,400 per year, which, I believe, is a record that the people of Alaska can well be proud of, and it is a matter of regret at this time that the Territory of Alaska has not been given more liberal treatment in the past in order that the production might be very much greater at this time than it is.

Along the lines of increasing the production of these important war supplies I wish to appeal to the committee that in the consideration of any bill or law in regard to the leasing or development of the oil fields of the country that Alaska be not overlooked. I think that it is very important that Alaska should be considered in any bill that may be brought forward at this time, because it is an emergency matter in so far as the Territory of Alaska is concerned.

The CHAIRMAN. Your bill, Senator Walsh, of course, includes Alaska?

Senator WALSH. Certainly.

The CHAIRMAN. Proceed, Mr. Sulzer.

Mr. SULZER. And I feel, in regard to Alaska, that it should be given more liberal treatment than the other sections of the country, because of the peculiar conditions existing there. And I believe that one of the most important things to grant in that connection would be a larger area in any leasing law. Alaska should have at least double the area granted that any other field in the country may be given, for reason that there are peculiar geographical and topographical conditions existing in Alaska. A tract may be granted in any of the fields in Alaska, and the greater part of it, possibly, would be so rugged that it would be inaccessible to oil development.

The CHAIRMAN. This bill provides for 2,560 acres in the lease. You think that is not enough in Alaska?

Mr. SULZER. No, sir.

Senator WALSH. Let me remark that the bill in question does not undertake to make any provision concerning coal lands in Alaska, the coal lands of Alaska having been dealt with in the act relating to that. The remaining portions of the bill applicable to oil, gas, sodium, phosphates, and potassium do relate to Alaska. I think that the Delegate appears before you for the purpose of suggesting the incorporation of an amendment in the bill which will amend the existing law relating to coal lands in Alaska so as to increase the areas that may be taken on lease?

Mr. SULZER. Yes, sir; that is precisely the case, also in regard to oil lands. The same conditions are true in regard to the oil fields.

Now, one of the matters that is of the most immediate necessity is the production of the largest possible fish supply in the Territory of Alaska. Last year that amounted to about $24,000,000, consisting principally of canned salmon, and this year it is hoped to make the production at least that much and as much more as possible. The fishing industry, consisting principally of the salmon and halibut fisheries of Alaska, is dependent absolutely upon a supply of gasoline and distillate. All the canneries catch their fish within a considerable radius of the cannery, up to several hundred miles, and fish are delivered to the canneries with gasoline boats. It is impossible to substitute any other craft at this time, even though coal could be developed and made available, for the type of the boat could not be changed, and in order to maintain this production of the food supply of the country it is necessary that an adequate supply of gasoline and distillate be provided.

I am advised there is very grave danger that this supply will not be provided; as it is impossible at the present time to make contracts for the supply of oil in Alaska from the California fields, and it is in order to provide this supply that I appeal to the committee to place some provisions in this contemplated legislation that will enable the Alaska fields to be immediately opened and become productive to the extent of supplying the urgent needs which exist at this time.

Senator WALSH. You could supply your own needs from your own fields, could you not?

Mr. SULZER. Yes, sir; in the Katalla field we have several wells, eight or nine, I believe, that are producing at this time. It is a very high grade oil, and they are producing gasoline.

Senator WALSH. Has title been acquired to those?

Mr. SULZER. There has been title granted to one claim—just one claim in the whole of Alaska has been patented.

Senator WALSH. That is, one oil claim?

Mr. SULZER. One oil claim; yes, sir.

Senator SHAFROTH. How many acres are contained in that?

Mr. SULZER. One hundred and forty acres.

Senator WALSH. Do they actually occupy that—are any other tracts being occupied?

Mr. SULZER. They occupy the other tracts simply by possession. They took these claims in 1898 and 1899, prior to any withdrawals, and have simply been holding them.

Senator WALSH. But, as I understand, all the other prospective oil-bearing fields are withdrawn?

Mr. SULZER. Yes, sir.

Senator WALSH. Everything they know of is withdrawn so that no further development can take place until there is legislation?

Mr. SULZER. Yes, sir.

Senator WALSH. Or the withdrawal is canceled?

Mr. SULZER. Yes, sir.

Senator SHAFROTH. How many of those possessory claims are in existence and producing; I mean those located back there before the withdrawals?

Mr. SULZER. There are approximately 50 claims in the Katalla fields that have been held; they were all located prior to the withdrawal and they have been held since that time.

Senator SHAFROTH. And worked?

Mr. SULZER. And worked; and about eight working wells have been developed.

Senator SHAFROTH. Is that true as to any of the other oil lands in Alaska?

Mr. SULZER. No, sir; I do not think there has been any development in any other of the fields.

The CHAIRMAN. How far is this field from the coast?

Mr. SULZER. It is about 30 miles from the Copper River Railroad, but it is very close to the coast.

The CHAIRMAN. How close?

Mr. SULZER. It extends right from the coast mud flats up to the higher ground.

The CHAIRMAN. From Cordova?

Mr. SULZER. South of Cordova; what is known as the Controller Bay section.

Senator SHAFROTH. What is the total production a year from all your fields?

Mr. SULZER. I have not those figures. The wells are small; they only produce about 8 or 10 barrels a day, I believe.

Senator PHELAN. It cuts no figure in your demand for oil, in the use of your fishing ships. It does not supply them?

Mr. SULZER. Just in a very limited way, sir.

Senator SHAFROTH. Has the naval reserve extended over——

Mr. SULZER. No, sir; no naval reserve there and none——

Senator SHAFROTH. None in Alaska at all?

Mr. SULZER. No, sir; none are asked for for the reason this is not fuel oil. It is a paraffine base oil and has no value, as I understand, to the Navy for fuel purposes. It is a very high-grade oil, and very valuable for the production of gasoline and distillate, but not for fuel purposes.

Senator PHELAN. If there were a leasing bill passed that field would be opened?

Mr. SULZER. Yes, sir.

Senator PHELAN. Now, there is no authority to open new wells?

Mr. SULZER. No, sir.

Senator PHELAN. Then the claims, 50 claims outside of those worked, have lapsed by recent failure to prosecute the work, I suppose?

Mr. SULZER. No, sir; I do not think they have lapsed. The claimants still hold them, but they are more or less at sea as to how to proceed and what to do. They want some definite interpretation in regard to their status, and in regard to the leasing I do not think that would cure the immediate emergency existing there, but if these people could be given an interpretation from the Interior Department as to their status under the law, and a preferential right to lease their ground in case patents would not issue, they would be justified in immediately undertaking intensive development and we would thus obtain an immediate supply of oil.

Senator PHELAN. If the claimants were given an interpretation as to the awarding of the leases, that would meet their demand, would it not?

Mr. SULZER. Yes, sir; that is exactly what they would like to have.

Senator WALSH. You spoke about the area of the leaseholds. The Borland Act provides, my recollection is, for 2,560 acres; that is, four sections?

Mr. SULZER. Yes, sir.

Senator WALSH. How large do you feel the coal-lease tracts should be?

Mr. SULZER. I think they should be at least double.

Senator **Walsh**. That is, eight sections of land?

Mr. **Sulzer**. Yes, sir.

Senator **Walsh**. Four miles long by 2 miles wide?

Mr. **Sulzer**. Yes, sir.

Senator **Walsh**. And that, as I understand you, by reason of the fact that there would be a very considerable area—more or less of an area—that would be unworkable?

Mr. **Sulzer**. Yes, sir.

Senator **Walsh**. Unproductive?

Mr. **Sulzer**. Yes, sir.

Senator **Walsh**. Now, about the oil. The oil areas are, my recollection, one section within 50 miles of a producing well? And four sections more than 50 miles from a producing well. Why should anyone have a lease of more than four sections of land 2 miles square for the purpose of prospecting for oil?

Mr. **Sulzer**. Well, the conditions existing in Alaska, Senator, I think, will be recognized as different from what they are in the rest of the country. It is a pioneer proposition. There are the questions of risks involved. It is noncontiguous to the United States, and there are a great many difficulties involved in getting up into that country. The topographical conditions in most of these fields are very rugged, and there is a considerable area of ground in any claim that may be taken up which would not be workable, due to the topographical conditions, glaciers, and matters of that kind, and it seems to me that the situation is entirely different from what it is in the States; a man should be given more liberal consideration in order to induce him to go up there and take the risks involved in developing an entirely new country. And as has been said, the conditions existing in the coal areas are rather problematical; there are faults and various geological phases which have not been thoroughly demonstrated, and a person engaged in developing a proposition of that kind should have more liberal treatment, according to my idea, than one operating in a known and developed field. The interests of the Government should be protected, but the management of a coal mine in a pioneer field must be accorded more latitude and discretion than in a field where all the conditions have been thoroughly demonstrated. Otherwise people will not undertake to make the necessary investments.

Senator **Walsh**. I desire to say that I have felt some doubt as to whether the area of the oil and gas leases might not be more widely extended, even in continental United States. It is limited, as I have indicated, to 2,560 acres, but the Indian Office, under authority of an act of Congress, grants leases for tracts on the Osage Indian Reservation in the State of Oklahoma to the amount of 3,800 acres, and it is claimed that that is as small an area as one ought to undertake to prospect. I do not speak with any authority upon that, but it may be found advisable to extend the area even outside of Alaska.

The **Chairman**. Mr. Sulzer, you may proceed.

Mr. **Sulzer**. Without taking up any more time of the committee, I would ask permission, Mr. Chairman, to submit to the committee, to appear in the hearings, a memorandum which I have prepared on this subject.

The **Chairman**. We shall be very glad to have it incorporated in the record.

Mr. **Sulzer.** And also a proviso to be inserted in any contemplated bill in order to enable those who have been engaged in this development of oil in Alaska to proceed immediately to increase the operations to such an extent that Alaska may be provided with an adequate supply of gasoline and distillate to take care of our fishing and other industries.

The **Chairman.** You want that to be considered by the committee as an amendment?

Mr. **Sulzer.** Yes, sir.

The **Chairman.** All right; put that in the record in full as the proposed amendment requested by Mr. Sulzer.

Mr. **Sulzer.** Then I should like to submit a memorial from the Legislature of the Territory of Alaska in regard to this subject.

The **Chairman.** You may incorporate that also.

Mr. **Sulzer.** And I should also like to submit a resolution by the Seattle Chamber of Commerce and Commercial Club in regard to the leasing of oil lands in Alaska.

The **Chairman.** The same order in regard to that.

Senator **Shafroth.** Has there been any development in the way of coal lands up in Alaska?

Mr. **Sulzer.** Well, as I understand, there has not; there has not been any substantial development, to my knowledge, since the withdrawals some years ago.

Dr. **Manning.** A lease was given to a man by the name of Martin to operate one of the units of the Alaska Railroad contracted, I think, for several hundred tons a day, and he ran into a fault, and the Alaska Railroad was unable to get his coal, so they proposed to take over that lease, possibly for 60 or 90 days, and try to find sufficient coal there to operate the railroad. In the meantime the Secretary of the Interior has authorized the development of what is known as unit 12, which is up in the Chickaloon district. That is the only locality outside of that field that has been developed to any extent.

Senator **Shafroth.** You say he has authorized the development? Has lease been made to any private parties?

Dr. **Manning.** Lease to unit No. 12 has not been made. That unit is in the Chickaloon district. That is the one which the Alaska Railroad proposes to work in conjunction with this other tract of land leased by Martin, who was unable to produce coal in sufficient quantities to operate the railroad. The railroad was under the difficulty of either buying coal and shipping it into Alaska at $20 a ton or producing it.

Senator **Phelan.** What developments have been worked; what development has been undertaken?

Mr. **Sulzer.** In the Matanuska district and some development in the Bering River field.

Senator **Phelan.** One of the objects of the railroad is to open these fields, is it not?

Mr. **Sulzer.** Yes, sir; the Matanuska field.

Senator **Phelan.** And now there is a question about the value of the fields?

Dr. **Manning.** There is no question about the Matanuska and some of the Bering River. Matanuska coal compares favorably to the New River and Pocahontas coal. Tests were made by a United

States ship which indicated that the steaming quality of the Matanuska coal was as good as the Pocahontas and New River coal.

Senator SHAFROTH. But wha the output of that mine that started and could not produce coal for the railroad in sufficient quantity, do you know?

Dr. MANNING. I have not the exact figures, but not very large. Martin ran into a fault. A railroad is built to this mine; I do not know exactly the length of the spur, but that is the only source at the present time the railroad can get its fuel from without shipping it in. The railroad in the Chickaloon district, this unit 12, which the Alaska Commission proposes to develop, will be built there in the course of the next 60 days, so they will be able to furnish coal from that mine, and that is the mine from which 1,000 tons of coal was taken by the Bureau of Mines for the Navy Department some few years ago. It is a very high quality of coal.

Senator PHELAN. Is it under private ownership?

Dr. MANNING. No; it belongs to the Government.

Senator SHAFROTH. Did the Navy use it?

Dr. MANNING. They used it on some of their trial trips.

Senator SHAFROTH. But no quantity was shipped down to them?

Dr. MANNING. No; as a matter of fact they have abandoned the use or, rather, are discouraging the use of coal and building their battleships now all oil burning.

Senator SHAFROTH. Yes; I see. You do not know the quantity that was produced there?

Dr. MANNING. About 1,000 tons.

Senator SHAFROTH. Was it stored?

Dr. MANNING. No; it was used; it was shipped down to Anchorage and put on board vessels.

Senator SHAFROTH. How far is that from the railroad now?

Dr. MANNING. I should say probably 20 or 30 miles.

Senator SHAFROTH. Can you point out here on the map where that coal is located?

Dr. MANNING. Yes, sir; it is here [indicating on map].

Senator SHAFROTH. How far is the railroad built?

Dr. MANNING. I have not the exact figures, but I understand probably within about 20 miles. Here is a coal field right there called the Chickaloon district. Here would be the main line of road up to Fairbanks. To develop that coal field a spur goes from here up to there [indicating].

Senator SHAFROTH. And has been built?

Dr. MANNING. No; they are building it now. Within 60 days it will be built on the Chickaloon line.

Senator HUSTING. How far has the railroad been completed north?

Dr. MANNING. They are working now. The Secretary of the Interior has now under consideration the purchase of a railroad already built from near the Nenana coal fields to Fairbanks. This Nenana coal field is lignite coal; not as good as we get down farther.

Senator HUSTING. What is this, bituminous?

Dr. MANNING. Yes, sir; in the Matanuska field.

Senator SHAFROTH. Where are there any other coal fields here?

Dr. MANNING. All this country; some on both sides of the river. There is some anthracite coal up north of Chickaloon.

Senator WALSH. The big field, Senator Shafroth, is down the coast some two or three hundred miles, southeast.

Senator SHAFROTH. Is that right near the coast?

Senator WALSH. Twenty-five or 30 miles from the coast.

Senator SHAFROTH. Is there contemplated to be a railroad constructed there?

Dr. MANNING. There is a line running into the Martin lease, and I am not quite sure where that is. That is not on this map. That is the mine that failed. The railroad hoped to get sufficient coal to operate the railroad.

Senator PHELAN. Where is that mine?

Dr. MANNING. It is not on this map.

Senator PHELAN. Is not that railroad designed primarily to bring coal out?

Dr. MANNING. That railroad is designed for the development of Alaska, but coal is one of the industries to be developed.

Senator PHELAN. It does not look on this map as if there were any productive valleys along the line of this railroad.

Senator WALSH. Susitna is a good agricultural valley, but the great agricultural valley is Nenana here.

Senator PHELAN. This comes up from tidewater, then?

Senator WALSH. That is good agricultural land, this Susitna Valley.

Senator PHELAN. This is really the terminus of the road?

Senator WALSH. The present terminus is Anchorage, but the all-year-round port is Seward. Anchorage is only a summer port.

Senator SHAFROTH. Shall we proceed further this morning?

Senator WALSH. There are some gentlemen here that were to tell us something about the potassium, sodium, and phosphate situation.

Mr. SULZER. I should like to say, just with regard to this coal situation which has been discussed, I have been advised by the Navy Department that they are most anxious to obtain 250,000 tons of this Matanuska coal per annum for the Navy's use on the Pacific coast. It seems to me a justification for building this railroad in there, rather than transporting coal from the West Virginia fields clear across the continent to the Pacific coast and using up the cars when there is a car shortage now for the movement of the commerce of the Nation; it seems to me it would be the wisest thing to do to pass some legislation or take some action of some sort to immediately bring about a situation that would induce the development of those coal fields. The Alaska coal fields are very extensive, and it is extremely important in this emergency that the laws and regulations be such as to induce immediate and adequate development.

Senator SHAFROTH. This bill does not touch Alaskan coal fields, does it?

Mr. SULZER. That is just what I wanted to talk about. I want some action taken so it would cover those coal fields and give us some liberal treatment, so we could bring about adequate production of coal, not only for the Navy but for the Pacific coast.

Senator PHELAN. Why, Senator Walsh, was not Alaska included?

Senator WALSH. We thought we had disposed of Alaska coal lands. We passed an act authorizing leasing of coal lands in Alaska, but that act was applicable to Alaska only.

Senator PHELAN. You say that act was passed?

Senator **Walsh**. Yes; that is a law now.

Senator **Phelan**. Then what is the complaint—that it is not adequate?

Senator **Walsh**. The complaint is that the area is not large enough. That act, in terms, authorized leases of two sections, 1,280 acres, and the claim is, and Mr. Peabody apparently is of that opinion, that is not large enough; that in order to induce the development a larger area should be given to the lessee.

Mr. **Sulzer**. Mr. Chairman and Senators of the committee, I thank you for your kind consideration.

(The documents referred to above are here printed in full, as follows:)

[Memorandum showing dependence of basic industries of Alaska upon an adequate supply of gasoline and distillate and that an emergency vital to national defenses exists in regard thereto.]

ALASKA FISHERIES.

The fish products of Alaska for the year 1916 amounted to $24,180,049, including 4,900,627 cases of canned salmon. The catching and collecting of these fish is and must be done by large fleets of fast boats using gasoline and distillate as motive power, and, in fact, the industry is wholly dependent upon such craft.

The emergency existing in the Nation at this time demands that the fish production of Alaska this year be made the largest in its history, and every effort is being put forth to accomplish this result. It is expected that if there is no serious interference the salmon pack of 1917 will reach considerably in excess of 5,000,000 cases.

The canneries are all located along the shores of the Alaskan coast, and the fish are caught and brought to the canneries from the surrounding waterways up to a radius of 200 miles, almost exclusively by motor vessels. Without an adequate supply of proper fuel for these motor vessels the salmon industry of Alaska would be practically destroyed. In the halibut and other fish industries the same condition is true. The wastage from the canning process is turned into fertilizer, which is of the utmost value in the farming industry of the country.

TRANSPORTATION.

The transportation of the mails and all the various commercial pursuits of the people of Alaska are largely dependent upon gasoline-boat service, for the settlements and developments are almost exclusively along the coast waters and river highways, the greater part of the remainder of the Territory being as yet too inaccessible by reason of the lack of roads and railways.

MINERAL PRODUCTION.

The gold production of Alaska for 1916 was $16,882,117, and one group of gold dredges alone consumes some 500,000 gallons of gasoline and distillate annually.

The copper production of Alaska for 1916 was $35,534,089, and this industry is likewise greatly dependent upon an adequate supply of oil.

The memorial of the Legislature of the Territory of Alaska shows an aggregate annual consumption of 7,000,000 gallons of gasoline and distillate in the maintenance of her basic industries.

We are now wholly dependent upon the refineries of California to supply this oil. Owing to demands to meet Federal requirements arising from the war, there is grave reason to believe that we can no longer safely rely upon imported oil to maintain our industries.

Not only should these industries be maintained at normal output but, owing to the war, they should be increased to maximum capacity.

The report of the United States Fish Commissioner just completed forecasts an unusually heavy run of salmon, and urges that additional facilities be at once provided to obtain every possible pound of fish not only as a ration for the fighting forces but also to relieve the stress of the civil population.

ALASKA COULD PRODUCE THIS OIL FROM HER OWN FIELDS.

The facts are briefly stated in the memorial of the legislature attached.

A small percentage of the total oil-bearing area referred to in this memorial has been located and more than a half million of dollars have been expended in pioneer development covering a period of over 15 years. The wells are small, but the quality of oil is high, peculiarly adapted to the production of gasoline and distillate. It is wholly unsuited for fuel use. The high cost of development and the character of the oil would prohibit the development of this field as a source of fuel oil, irrespective of the small production per well.

ALASKA OPERATORS READY TO MEET EMERGENCY.

The several oil operators in the Katalla-Chilcat field are now prepared to drill at once sufficient additional wells to meet the emergency. They ask to be guided as to its distribution and price to meet the defense requirements; and they ask in return that they be now advised as to the department's present construction of the laws under which they are now operating, that they may be guided thereby, so that they may go ahead with a clear understanding of the legal requirement with which they must comply and according to which they will later be judged should the Congress fail to pass the proposed oil-leasing bill as prayed in the Alaska memorial. Such a present ruling will not be binding upon the department as to any specific lands, but it will afford a clear guide to the Alaska oil men as to the rules under which they shall proceed, pending any action of Congress.

THEIR ENCOURAGEMENT AND PROTECTION.

Specifically, they are now asking the department as to whether, in the light of all the facts as known by the department, they may rely in principle on the previous ruling of the department affecting this field. This present request is necessary and proper and wholly justified by the emergency that now exists. They are not asking any modification of the law, any changed or more favorable ruling; merely an affirmation of the department's previous construction of existing law as applied to that field.

It is clear, therefore, that while, as shown in the memorial, Alaskans are eager for the passage of the general leasing bill, they can not wait its enactment and the necessary period of delay required to put it into force in that distant Territory.

It may be properly cited that a period of two years was required, after the passage of the Alaskan coal-leasing bill, before the necessary administrative and preliminary work could be done to make it effective. A large number of able men pushed this work with all diligence. It takes time to handle the distant and unsurveyed public lands of Alaska.

PROPOSED LEASING BILL.

As shown in the memorial, Alaska asks that her oil fields be now opened for development under the terms of a general-leasing bill. They ask for provisos appropriate to the recognized conditions peculiar to Alaska. In the drafting of this bill, the men who have pioneered the industry, and who are able to take initiative in relieving the present stress, ask only that they may be protected by a proviso authorizing the Secretary of the Interior to lease to them the land which they are now and for 15 years have been developing in undisputed possession under the general mining laws. Under the circumstances no bona fide Alaskan would seek to take it from them. It would be manifestly unfair to permit any outsider—any large and established oil interest—to come in after the war and outbid them for a lease to the land from which, as a result of the pioneer work and heavy expenditures of years, they are now prepared to help solve a present national emergency.

On behalf of the people of Alaska an immediate departmental ruling for guidance is respectfuly urged; that the general leasing bill provide for the opening under lease of all Alaskan oil fields ,with a clear proviso permitting the men now negaged in oil development in Alaska to continue their work under a lease. It is believed that the form of proviso attached will safeguard them in the immediate drilling of additional wells without in any wise modifying the provisions of existing mining laws.

Submitted by

CHARLES A. SULZER,
Delegate from Alaska.

[Proposed amendment to be inserted in leasing bill to enable Alaska to obtain an immediate supply of gasoline and distillate to supply her needs.]

Provided further, That whereas prior to November 3, 1910, certain oil or gas lands were located in the Territory of Alaska and the locators, their successors and assigns in interest, were at said time and still are in possession thereof and asserting possessory title thereto under the mining laws, and upon which the locators, their successors and assigns, have made certain improvements and have drilled productive oil wells and have otherwise demonstrated said lands to be chiefly valuable for oil and gas, and now occupy and hold the same, claiming such locations as free and exempt from the order of withdrawal effective in the Territory of Alaska on November 3, 1910. And whereas there is now an emergency for a production of oil in the Territory of Alaska to meet the public demands and necessities: Now, therefore, in consideration that any such claimant relinquish to the United States within one year from date of this act, or within six months after final denial or withdrawal of application for patent, of such oil or gas claim or subdivision thereof, the claimant or his successor in interest shall be entitled to a lease of the land included in each such oil or gas location of 160 acres or less upon which any such claim is based, and upon which the claimant, his predecessors in interest, or those claiming through or under him, shall, prior to the time of granting such a lease, have drilled one or more producing wells, or shall have discovered sufficient surface seepage that, taken in connection with the known geological formation, indicates the presence of oil within the limits thereof; or where any such relinquished claim is one of a group of claims not exceeding five, on any one of which group such a productive well has been drilled, or such a seepage has been discovered, and of which such claim or group of claims the claimant is in actual possession at the time of the passage of this act, and for all of which claims the annual assessment work has been performed up to and including the year 1916, the claimant in good faith relying upon any such drilled well or any such discovered seepage and the known geological formation as a sufficient discovery, and where any such claim is chiefly valuable for oil or gas. Proof of the existence of any such condition shall be made to the satisfaction of the Secretary of the Interior before the granting of a lease for any such relinquished claim, any such lease or leases to be upon such terms and for such period or periods of time as the Secretary of the Interior may deem just and equitable, all circumstances considered, but in no event upon a royalty exceeding one-eighth of the oil or gas produced and saved therefrom or for a period or periods of time exceeding 20 years, with the preferential right in the lessee to renew the same for successive periods of 10 years at a royalty not exceeding the maximum provided herein and upon such reasonable terms and conditions as may be prescribed by the Secretary of the Interior.

[Senate joint memorial No. 7.]

TO THE PRESIDENT OF THE UNITED STATES SENATE, AND HOUSE OF REPRESENTATIVES:

We, your memorialists of the Legislature of the Territory of Alaska, do most respectfully request that:

Whereas there are in the Territory of Alaska very extensive and valuable oil fields, the principal of which are (1) Katalla-Chilkat, (2) Nuchawak, (3) Yakatage, the former containing 26¼ square miles, the second 4¾ square miles, and the third 21¼ square miles, but, in all, 52¼ square miles, which is only a small fraction of the known area of oil lands, all of which have been thoroughly investigated and reported upon by the most competent oil experts in the United States. These reports show very rich yields, high-grade product, and easily accessible territory, being on the coast of Alaska, near Kayak Island; numerous heavy seepages of oil at Katalla meadow, Burls Creek, the Barrett Claim, and Chilkat, all in the Katalla field; and the Yakatage, Yukon, and Cathleen Creeks, all in the Nuchawak field; and at Oil, Crooked, Poul, and Johnstone Creeks, in the Yakatage field; and

Whereas the laboratory tests of the samples taken from these oil fields show a very high percentage of distillate and gas oil; and

Whereas the people of Alaska residing in close proximity to these fields use annually more than 7,000,000 gallons of distillate and gasoline in the general course of their industrial and maritime pursuits for which they are forced to pay exorbitant prices, owing to long distances from point of supply and heavy demand for product; and

Whereas, as these oils are seeping away and going to waste without any possibility of ultimate recovery:

Now, therefore, we, your memorialists, would respectfully urge that your honorable body give earnest attention to the formation of a plan leasing these oil lands according to the terms of the H. R. 406 or on the usual basis of one-eighth royalty, or under whatever provisions or restrictions you may deem it proper to impose. Thereby releasing to the people of Alaska and the entire western coast of the United States a product of one of our richest resources, of which there is at this time dire need. And be it further

Resolved, That a copy hereof be presented to the President of the United States, the Vice President of the United States, to the Speaker of the United States House of Representatives, to the chairman of the Commitee on Public Lands in the United States Senate, to the chairman of the Committee on the Public Lands in the United States House of Representatives, the Delegate to Congress from Alaska, and the Secretary of the Interior.

Passed the Senate April 18, 1917.

Passed the House April 25, 1917.

The following is a resolution, relative to the leasing of oil lands in Alaska, adopted by Alaska Bureau, Seattle Chamber of Commerce & Commercial Club:

Whereas all lands in the Territory of Alaska containing deposits of oil or gas are withdrawn from entry, and there is no existing law under which the same may be developed or operated; and

Whereas developments upon the one patented oil claim in Alaska, and upon certain pending locations made under the placer law prior to the oil-land withdrawal, have demonstrated the wealth of at least one of the oil fields, and the very high character of the product, and demonstrated that an important industry will be speedily established whenever the law will permit the development and exploitation of such fields; and

Whereas a considerable area of the lands immediately available for development are held under placer locations made prior to the oil-land withdrawal, and the claimants have expended considerable sums in the utmost good faith in the development of such oil lands, and in many cases have revealed their mineral wealth, and justice and equity demand that such claimants be dealt with fairly by the Government and afforded some compensation for their enterprise and sacrifice made by them of time and money; and

Whereas H. R. 406 is now pending before the Senate of the United States, and a substitute has been reported by Senator Phelan, for Senate Committee on Public Lands, which has been drawn to meet the conditions affecting the oil lands in the Western States, and the same appear to be applicable to conditions in Alaska, with certain modifications;

Now, therefore, it is, by the Seattle Chamber of Commerce and Commercial Club, upon the recommendation of its Alaska bureau, made after a careful investigation duly

Resolved, That we do hereby indorse and recommend for passage the so-called Phelan substitute for H. R. 406 and recommend that the same be enacted into law with, however, the following suggested modifications, which we deem necessary in order to make the same fully applicable to conditions in Alaska.

1. Provision should be made by amendment to section 6 of the Phelan substitute bill, or otherwise, for prospecting permits to areas in Alaska not exceeding 5,280 acres. The peculiar geological conditions in the Alaska oil fields demand this. Then, too, present development in the Alaska fields has been practically confined to one rather limited area. Such limited development does not afford a guide to future work that is afforded by the very extensive oil-land development in the Western States, and a larger prospecting area should be granted.

2. The royalty charged in Alaska should be established by law at not less than 5 per cent in amount of value of the production, and the rentals not less than 50 cents per acre per annum, and the bill should be amended so as to make proper provision to this effect. We recommend this because the wells in Alaska are all small producers, averaging not over 5 barrels each per day. Manifestly, a large number of such wells must be drilled in order to secure a moderate production cost. It costs as much to drill a well yielding a 5-barrel production as one yielding a 500-barrel production. A royalty of more than 5 per cent would in some cases be absolutely prohibitive, especially as there are other factors which will greatly increase the cost of oil-land development and

oil production in Alaska. The law affixing a minimum royalty will afford the Secretary of the Interior ample authority to charge a larger royalty or a higher acreage rental in the special cases which, in his judgment, may warrant such an increase.

3. We also recommend that the words "through competitive bidding" be stricken from lines 9-10, at page 32, in section 9 of the Phelan substitute bill, because we believe that the objections to making oil leases in Alaska under a system of competitive bidding would be very unfair and such as to render any leasing act inoperative in that Territory. It is not true conservation to charge too high a royalty, because inevitably it will result in waste. This is because the well will be abandoned whenever production declines to a point where it is not profitable to operate. We understand this has been shown by experience in leasing the Oklahoma Indian oil lands. The principal objection we urge, however, is that a system of competitive bidding will exclude the smaller operators. A large company with ample facilities can operate at a lesser expense. We insist that the better development of the fields demands the largest possible number of smaller operators.

Another serious objection is that it will discourage prospecting. One is not likely to expend large sums in development of oil lands if compelled to compete with others who have made no such investment, but seek to operate by the enterprise, labor, and industry of the prospector. We recommend that competitive bidding be not required, but that the matter be left for adjustment under general regulations to be issued by the Secretary of the Interior.

4. We recommend the insertion of the words "or permit" after the word "lease," on line 3, at page 33, in section 9 of the Phelan substitute bill, in order that there may be no doubt of the intention to allow a person to take more than one permit so long as the total amount taken does not exceed the maximum fixed by the law. We understand that is the intention of the committee in the draft of the Phelan substitute, but we fear that intention is not clearly expressed, and recommend the insertion of these words that ambiguity may be avoided.

5. Provision should be made for the protection of those claimants who still hold under placer locations made in good faith prior to the oil-land withdrawal. Justice demands this, for there are many such entries made in absolute good faith, upon which large sums have been expended. To this end we recommend that where public lands in Alaska containing deposits of oil or gas were occupied and claimed under the placer mining laws prior to the oil-land withdrawal, and where such claimants have done a substantial amount of development work prior to the withdrawal, either within or outside of such claims, so long as the same was designed for and adapted to the physical development of the same, and where the claimants have since continued as the occupants or claimants of such land and have expended in all not less than $500 in the development of each claim, and with the further provision that they shall either have discovered oil or gas or shall hereafter continue such work with reasonable diligence until oil or gas be discovered, such claims should be permitted to pass to entry and patent in accordance with the placer-mining laws in effect at the time of location, as statement of the actual facts as to the development work done by the present claimants upon the oil lands in Alaska amply warrants the provision hereby recommended. There are no naval reserves in Alaska. The product is a high-grade refined oil and is not a suitable fuel oil for naval use. The present claimants should be compensated for their investment, especially as the same has resulted in proving the fields and making known to the world the mineral-oil wealth of Alaska.

The vast amount expended by these claimants in the pioneer development work in the oil fields of Alaska has contributed a national asset of proved importance and immense possibilities.

There is no reason in justice or in equity why compensation should not be allowed to the men whose enterprise and investment revealed this wealth to the Nation. There is every reason why they should not be compelled to waste further time or money in litigation. We repeat that the provision should be made so attractive as to promptly induce their acceptance and thus make the proven oil fields of Alaska immediately available for development and operation.

Adopted by Alaska Bureau, February 5, 1917.

J. L. McPherson, *Secretary.*

Adopted by trustees of the Seattle Chamber of Commerce and Commercial Club, February 6, 1917.

C. B. Yandell, *Executive Secretary.*

The **CHAIRMAN**. Mr. Pennock, you may proceed and make your statement. What position do you hold on the National Council of Defense?

STATEMENT OF MR. JOHN D. PENNOCK, SYRACUSE, N. Y.

Mr. **PENNOCK**. I am chairman of the subcommittee of the chemical committee under the advisory committee, on alkalies. Alkalies include soda ash, caustic soda, and all soda salts, and potash.

The **CHAIRMAN**. All right; you may go ahead and make any statement you please.

Senator **WALSH**. Before you proceed will you please tell us what your business is and how you come to have familiarity with those particular commodities?

Mr. **PENNOCK**. Yes, sir. I am general manager of the Solvay Process Co., located in Syracuse and Detroit. The Solvay Process Co. manufactures soda ash and caustic soda in large quantities, and in addition to that for the last seven or eight years has been investigating the various potash deposits throughout the country, and for the last two years has been actively engaged in installation of plants for the recovery of potash from natural sources, and at the present time is actually manufacturing.

As chairman of this subcommittee the duty has been put upon me to secure statistics relative to the supply of potash in the country at the present time from natural sources—in fact, from all sources—and the requirements of the country; that is, the requirements coming from the United States Government during the war time and the requirements from the various industries throughout the country that use potash.

Now, while I am not able at the present time, as I reported to Dr. Nichols in our committee this morning, to give a detailed report on that subject, I am getting together a very large amount of data which I shall be able later to submit. But as far as I have gone in accumulating this data, in getting this information, I find that there is but a very small amount of potash available outside of Searles Lake—Searles Lake, San Bernardino County, Cal.

Senator **HUSTING**. What are the sources of potash?

Mr. **PENNOCK**. The other sources?

Senator **HUSTING**. I mean what are the various sources of potash—in what shape is it found?

Mr. **PENNOCK**. In Searles Lake it is found in the brines and in crystals, salt crystals in that lake, covering an area of 8 by 10 square miles, perhaps—something like that [indicating]. As I say, that is the principal source, and it is to that lake that the Government must look to get potash in sufficient quantities to be of any use in supplying the needs of the fertilizing industry. It might be said that potash at the present time in the United States is largely coming from alunite deposits in Utah and the brines of Nebraska; there are some 70 or 80 concerns which are trying to get their little quota of potash from the burning of wood and wood ashes. The residue or washings of wool are coming in for a small amount. The molasses industry is supplying a little, but, taken altogether, these ramifications in that way, where everybody is trying to get a little potash together on account of the high price, is only a very small percentage of what this country requires. It is a fact, perhaps, that from all that is coming now we may get enough to supply what we call the chemical industry of the country, but even that is doubtful.

Senator **Phelan**. Some is produced in the Southern States, is it not?

Mr. **Pennock**. In very small quantities. It may be said that in time, perhaps, we shall get considerable potash from the cement industry. They can vary their mix which goes into the furnace so that they can get additional potash and the blast furnaces of the country may be able to supply some, but taking it all in all it is a small quantity, and I should say that when you come to sum it all up that at the present time, from all these sources, we shall not get for the year 1917, over twenty to twenty-five thousand tons, perhaps, of potassium oxide. I think that is a high figure, out of the requirements of the country for 250,000 tons.

Senator **Phelan**. The southern potash development, do you know anything about it particularly?

Mr. **Pennock**. The Government has been making some drillings, I believe, in Texas, with the hope that they may locate there what is known as the Stassfurth deposits in Germany, but so far as I know they have not proved that it exists there.

Senator **Phelan**. There is an exportation going on of our potash. Do you know anything about the question of restraining the export of potash from the Southern field? I have heard that question raised.

Mr. **Pennock**. Senator, I would question whether there is any exportation of potash. There may be some, but I think it would be very, very small in quantity, if there is any.

Senator **Walsh**. What are the demands of the country in ordinary times, and what are they in view of the war necessities?

Mr. **Pennock**. The demands of the country in ordinary times, I should say, would be represented by 250,000 tons of potassium oxide.

Senator **Walsh**. That is for fertilizer purposes?

Mr. **Pennock**. All kinds of potash figured as potassium oxide.

Senator **Walsh**. That is chiefly used for fertilizer purposes?

Mr. **Pennock**. Ninety, anyway, if not a greater percentage goes into fertilizer.

Senator **Walsh**. Is it used to any extent in the manufacture of munitions?

Mr. **Pennock**. Yes, sir.

Senator **Walsh**. What use is made of it in the manufacture of munitions?

Mr. **Pennock**. It is used in making black powder. Du Pont uses quite a considerable quantity, and all the other manufacturers do, and the situation relative to powder supply there is a very serious one. If the war continues very long and the Government requires larger quantities than they now anticipate they will require, we have got to get potash for them in the form in which they use it—potassium nitrate.

Senator **Walsh**. What was the source before the war?

Mr. **Pennock**. All European; all from Germany.

Senator **Walsh**. How have we been getting our supplies since the embargo?

Mr. PENNOCK. Since the embargo we have not been getting any except what, as I have described, we have been able to accumulate from these various sources. I suppose that perhaps all the powder manufacturers had in stock at the opening of the war, or our connection with the war, that they had a large amount on hand. That has carried them along pretty well, but I got it directly from the Du Pont people that they will be seriously in need of potash if the war continues.

Senator WALSH. So far as potash is concerned, it appears to be a desperate situation?

Mr. PENNOCK. It is a desperate situation.

Senator PHELAN. The South American nitrate is what?

Mr. PENNOCK. It is sodium nitrate.

Senator PHELAN. And that is used also in the manufacture of explosives, is it not?

Mr. PENNOCK. Yes, sir; that is a starting point.

Senator PHELAN. That is not a substitute for the potassium?

Mr. PENNOCK. No, sir; you could not use sodium nitrate in the manufacture of potash.

Senator PHELAN. How is it used in the manufacture of explosives?

Mr. PENNOCK. Just what the combination is in the production of black powder, I do not know, but it has always been used, and they tell me it must be used; that no substitute can be used to take its place.

Senator HUSTING. What is this nitrate which is obtained by fixation from the atmosphtre; is that the same as the South American nitrate?

Mr. PENNOCK. In the fixation of nitrogen from the atmosphere nitric acid is produced. Now, if you want to make that correspond to Chili nitrate that comes to us in great quantities, just treat that with carbonate of soda. Of course, it would be very expensive.

Senator WALSH. They use carbonate of lime and so they make nitrate of lime instead of nitrate of soda, but the point is that both the soda and lime is simply to hold the nitrate acid?

Senator HUSTING. Does that answer the purpose in the manufacture of explosives?

Mr. PENNOCK. Oh, no; it is only used to get the form to be used for fertilizer.

Senator PHELAN. You mean by fixation you can not get nitrate for explosives?

Mr. PENNOCK. You can make nitric acid, you see, but the most of that fixation has been going on in Norway and Sweden, and you can not ship nitric acid in great quantities any great distance; therefore, they absorb it in calcium and make calcium nitrate, and that is solid and they can ship it to any point; then they can take that calcium nitrate and use it for any purpose they desire.

Senator HUSTING. Can they put it back in the form where they can use it in the manufacture of explosives?

Mr. PENNOCK. Yes; that can be treated and throw out calcium and give us sodium and other products.

Senator WALSH. Tell us how generously we could be supplied from those Searles Lake deposits.

Mr. PENNOCK. I should say if this leasing bill went through, throwing that lake open and available, that inside of a year, or inside of a period which would enable us to avail ourselves of the opportunity, the result would be appreciable in supplying the demands for fertilizer. This would be dependent, however, upon Government help in insisting that manufacturers of vacuum pans and other equipment that was required was brought about. If, for instance, we started in to get enough potash out of the lakes there to supply the fertilizer industry, we would at once go to a number of manufacturers of vacuum pans—there are quite a number of them throughout the country—and any one of those can produce a pan inside of three or four months. Now, that pan—it is a quadruple effect—would produce in the neighborhood of 1,000 tons a month, or 12,000 tons a year; so you see we would have quite a number of units of that sort, and you would get enough by the 1st of May to appreciably affect the supply and give to the country what it requires to help out its agriculutral endeavors.

Senator WALSH. You are in that business yourself, as I understand you—in the production and sale of potash?

Mr. PENNOCK. Yes, sir.

Senator WALSH. Could you tell us whether lessees could be procured to take leases on the Searles Lake properties?

Mr. PENNOCK. You mean in case it was possible to get leases from the Government would people come forward and take them and at once go to work at it?

Senator WALSH. Yes.

Mr. PENNOCK. Undoubtedly that is so.

Senator PHELAN. How could you lease the surface of a lake in partition, in various subdivisions?

Mr. PENNOCK. It could be divided in area. Of course, this lake—you can imagine a huge body of salts, which are suspended in brine. They are floating there, so to speak, you see. And consequently we put down pumps in almost any part of it, and you begin to collect the brine.

Senator PHELAN. One man's pump would drain another man's subdivision, would it not?

Mr. PENNOCK. That might be so. It is probable there is water coming in to dissolve the potash salts.

Senator PHELAN. What is the estimated life of that supply under conditions of pumping?

Mr. PENNOCK. Why, Dr. Manning gave figures of something like 10,000,000 tons, was it not? Our consumption is 250,000 tons, you see.

Senator WALSH. There is 40 years' supply there?

Mr. PENNOCK. Forty years' supply.

Senator SHAFROTH. At how much per year?

Mr. PENNOCK. Two hundred and fifty thousand tons per annum.

Senator PHELAN. That would be supplying all the needs of the United States?

Mr. PENNOCK. That would be supplying all the needs of the United States as they existed in the year 1913. I think that is perhaps the latest statistics we have here.

Senator PHELAN. Do you recall how it is operated now? A certain amount of potash is being taken out of there by the Trona Co., is it not?

Mr. **Pennock.** Yes, sir.

Senator **Phelan.** And that is the only company?

Mr. **Pennock.** Yes, sir.

Senator **Phelan.** Do you know the conditions under which it is aken out?

Mr. **Pennock.** Yes, sir.

Senator **Phelan.** I should like to hear that.

Mr. **Pennock.** Wells are put down a distance of 20 to 40 feet——

Senator **Phelan.** And they are claiming under some kind of ownership?

Mr. **Pennock.** Yes, sir.

Senator **Phelan.** I do not understand it, but I know they have ome sort of claim, which is disputed, however.

Mr. **Pennock.** It is disputed locations.

Senator **Phelan.** It was for the location?

Mr. **Pennock.** Yes, sir.

Senator **Phelan.** They are a foreign corporation; therefore there s a question whether they have a right?

Mr. **Pennock.** They are a foreign corporation; yes, sir.

Senator **Phelan.** That question, however, can not be settled here.

Mr. **Pennock.** No, sir.

Senator **Phelan.** Then they pump this and deliver it at their efining works at San Pedro?

Mr. **Pennock.** No, sir; they pump it at a plant they have on the hore of the lake, within a mile or two, where they take the brine and vaporate it there by a process of extracting the crude salts, the salts ontaining a small quantity of potash, and possibly that product is hipped and sold as a fertilizer as such, or it may be sent to a refinery nd a higher percentage obtained.

Senator **Phelan.** Is that sent out of the country, do you know?

Mr. **Pennock.** I doubt if it is.

Senator **Phelan.** Their refining plant is at tidewater, is it not?

Mr. **Pennock.** They have a refining plant there, I understand.

Senator **Phelan.** We have no information on that subject, Dr. Manning—on the subject of the operation of the San Pedro plant.

Dr. **Manning.** No; I have not.

Senator **Phelan.** You do not know whether they export that otash or sell it for domestic consumption?

Mr. **Pennock.** No, sir.

Mr. **McDowell.** So far as I know, it is sold for domestic consumption. We purchase some of it.

Senator **Walsh.** Tell us about the attempt to use the alunite leposits in Utah.

Mr. **Pennock.** Yes; there exist in Utah veins of alunite, which s composed of the metal aluminum, sulphur, and a little silica, but ot very much potash. The process there is simply the calcination of that after recovering from the shaft, I believe, at the mine; passing through a furnace there, it is calcinated.

Senator **Walsh.** That is simply a rock that contains a higher percentage of potash than granite, for instance, is it not?

Mr. **Pennock.** Yes, sir; it contains 12 per cent.

Senator **Walsh.** That is, you could chemically treat granite the ame way and get potash out of it?

Mr. **Pennock.** Yes, sir.

Senator **Walsh**. Except there is a higher percentage of potash in this particular rock?

Mr. **Pennock**. Yes, sir.

Senator **Walsh**. What success has attended that?

Mr. **Pennock**. I understand—Mr. MacDowell probably will be able to give you more information on that point, as he is connected with it; but there is a plant in operation there producing an appreciable amount of potash. There is another plant which is located, but is not doing very much, and there is still one other concern that has alunite deposits that is proposing to get potash out.

Senator **Walsh**. You speak about the Nebraska deposits.

Mr. **Pennock**. The Nebraska field is in the western part of the State; there are some very shallow and small lakes, a number of them, and we have estimated the total potash in all those lakes, and I doubt if there is a greater quantity than about 200,000 tons, so that during the war probably this supply will be absolutely exhausted.

Senator **Pittman**. Mr. Pennock, at what price is potash commercially practical for use in agriculture?

Mr. **Pennock**. Well, it is difficult for me to answer that question in view of the fact I am not a fertilizer manufacturer, but I understand it to be a fact that fertilizer manufacturers have put very little potash into their fertilizers since the war began, for the reason that the farmers could not afford to pay the price for that fertilizer per ton that they would have to pay to meet the cost of the potash to the fertilizer manufacturers.

Senator **Pittman**. What was the price of potash before the war?

Mr. **Pennock**. Potash before the war, muriate, which comes into this country in the greatest quantity, averaged about $35 a ton, probably.

Senator **Pittman**. What is it now?

Mr. **Pennock**. I should say that a price of $375 a ton might be representative.

Senator **Pittman**. Even the small quantity we have in this country could hardly be used for fertilizing land at any such price, could it?

Mr. **Pennock**. Absolutely not.

Senator **Pittman**. I was not here when you were testifying, at least not all the time, but did you have the figures as to the amount produced in this country last year?

Mr. **Pennock**. I made a statement that I thought for the year 1917 there might be a total of twenty to twenty-five thousand tons of potassium oxide produced. Last year, of course, there was very much less produced, because a number of these projects to recover potash in small quantities had not been started.

Senator **Pittman**. Are you familiar with the alunite deposits?

Mr. **Pennock**. Yes, sir.

Senator **Pittman**. What percentage of potash is contained in that rock?

Mr. **Pennock**. Ten to 12 per cent.

Senator **Pittman**. How much per ton would it cost to produce that potash from that form of ore, approximately?

Mr. **Pennock**. Of course, you really would have to answer that question by asking one, that is, whether you want to know what it would cost to produce a crude potash, which would result in bringing that 12 per cent up to possibly 25 per cent, or whether you would want to take the residue from firing that and lixiviate it with water, take that water and evaporate it. Now, 80 per cent of muriate——

Senator PITTMAN. That is a grade of potash I am using as an example.

Mr. PENNOCK. I should say it would cost in the neighborhood of $60 a ton to produce.

Senator PITTMAN. Well, you do not look very hopefully forward to these deposits, then, for a supply of potash to this country, do you?

Mr. PENNOCK. No, sir. In the first place the quantity of alunite suitable and available is very limited, and, in the second place, the cost of producing it and getting it ready for shipment f. o. b. the plant, is high, and, in the third place, the utilization of that potash is in the eastern fields, the manufacturers, 90 per cent of them, are in the Southern and Eastern States, and the freight rate necessary to pay the railroad for getting that potash to the point where it is put into fertilizer would be prohibitive as against any potash that comes from Europe, unless a high tariff duty is put upon European potash.

Senator PITTMAN. And you think for that last reason that no person would prepare to engage extensively in that character of mining unless he knew that there was going to be a tariff to protect him against possible importation from Germany?

Mr. PENNOCK. In that locality from alunite.

Senator PITTMAN. You may proceed.

Mr. PENNOCK. I was simply going to make the statement that we have the Panama Canal, and I am satisfied that in time reasonable rates for potash from the western coast will be given to manufacturers to ship to eastern points. You see potash coming from the West to Louisiana would bear a decidedly low freight rate compared with the freight rates from Utah to the same point—Louisiana.

Senator PITTMAN. Is it not a fact also that the character of the deposits at Searles Lake is much more economically worked than any other deposit you know of in the United States?

Mr. PENNOCK. Oh, yes, sir. Of course as I stated before, we manufacture a soda ash.

I might digress a little and give you a point as to how soda ash is manufactured, to illustrate the point as to how cheap it can be made at Searles Lake. Soda ash has as its starting point sodium chloride. Now, sodium chloride is common salt. We do not start with salt existing as you know it, but start with brine. We drill wells 1,400 feet in the ground where there is a natural salt deposit; we dissolve that salt, make a saturate brine, and it is put in our plant. The cost of that brine per ton of soda ash produced is hardly worth counting. And in the same way we would have a parallel situation at Searles Lake. We would pump the brine from the earth, as we pump our brine to make soda ash, and we would put it right through the operation without its costing us hardly anything for the supply of brine, getting it to our evaporators.

Senator PITTMAN. Could, in your opinion, this Searles Lake be developed and mined and produced in competition with German supply?

Mr. **Pennock.** I do not get your question exactly. You mean mined?

Senator **Pittman.** I mean after the war is over, we will say, when conditions become normal, would the lessee in the Searles Lake field be able to compete with the producers of German potash?

Mr. **Pennock.** Oh, yes; undoubtedly. In the first place, you have a supply of fuel at that point which, when we started in to manufacture there, was as low as you get anywhere in the country in the fuel oils of California. In the second place, labor is satisfactory. Labor is contented there. You speak of Searles Lake being out in the desert. As a matter of fact it is hot there in the summer time, but the nights are cool and I say that even so far as we have gone—and we have been operating there some months—we have had no difficulty in getting good labor at a reasonable price, and the labor is contented, so there are those advantages. Now, we have not any such complicated process of manufacture as they have in Germany. There they have to go down in a mine several thousand feet, quarry the stuff, bring it up, dissolve it, crystallize it, and treat it in all sorts of ways, so they go through a much more complicated process of manufacture than one would have to at Searles Lake.

Senator **Walsh.** What is the rock from which they secure it—the German supply?

Mr. **Pennock.** It is carnallite, sylvanite, and kainite.

Senator **Walsh.** It is a rock from which they are obliged to extract the potash practically the same as you do in case of alunite?

Mr. **Pennock.** Yes, sir.

Senator **Walsh.** Only in Searles Lake it is in the form of brine?

Mr. **Pennock.** In the form of brine.

Senator **Pittman.** Then why could we not work the rock deposits in this country in competition with the same character of deposits in Germany?

Mr. **Pennock.** Because thus far the potash rocks, the salts have not been found, although people have exploited the proposition in almost every State of the Union to endeavor to find them, but even when found I doubt if the pure muriate of potash, 80 per cent, could be manufactured as cheaply as from Searles Lake.

Senator **Phelan.** During your absence, Senator Shafroth, the question was raised as to the value of the nitrogen-fixation plant producing nitric acid for fertilization and for explosives. It seems it has not as great value as was claimed when we established such a fixation plant. I can not quite understand the reason why nitric acid can not be economically used for both purposes; it is so used in Germany. You give preference to the natural deposits?

Mr. **Pennock.** Of nitrate soda, if you can get them.

Senator **Phelan.** The other question was then as to Searles Lake as a practical question, how can we draft legislation that will open Searles Lake, a liquid deposit of minerals, to miners who intend to prospect the business of extracting the potash salts. You gentlemen might inform us while we are here.

Senator **Pittman.** We have a bill prepared on that.

Senator **Phelan.** What is the plan proposed?

Senator **Pittman.** With regard to Searles Lake, as I understand it, and I had a talk with the Secretary of the Interior a number of times in regard to it, that is the lessees must cooperate in the reduction of these salts and in the sale of them. In other words, you are correct to the extent that it is in the nature of a monopoly; unless the lessees are all interested in the reduction plant, they could not succeed. It would simply be a wild scramble to pump these salts out and then be unable to utilize them, and the bill anticipates by its very terms that there is going to be a monopoly of this lake, but a monopoly by various lessees cooperating in the reduction through one plant of these salts.

Senator PHELAN. A Government ownership and operation has been considered?

Senator PITTMAN. Well, I have discussed that to a certain extent with Mr. Finney, I think, on one or two occasions, and also with Mr. Lane, but to a very limited extent with him, and that did not meet with encouragement; in fact, I am satisfied that no bill of Government ownership of that character would pass through the Senate.

Senator SHAFROTH. What bill is it you refer to, Senator?

Senator PITTMAN. I have a bill here dealing solely with potash that I introduced and referred to the committee, but of course we did not act on it because we have not acted on any, and I had referred that bill to the National Council of Defense, separating it from this general leasing bill, and that bill, in turn, was referred to the Secretary of Agriculture, and he has informed me that he has referred to others for statistics on the subject and that he will make a report.

Senator PHELAN. Does it provide a feasible plan for operation by separate locators?

Senator PITTMAN. I think so, and the Department of the Interior thinks so; they feel that it provides a feasible plan.

Senator WALSH. Why would that not be taken care of under the present bill which authorizes the Secretary of the Interior to make rules and regulations?

Senator PITTMAN. It is quite similar to this provision in this present leasing bill. I suggest some changes in it, but very few. But that is the plan that the Secretary of the Interior has in mind to carry out under the bill; that is really what Senator Phelan wanted to know, I believe. That is his plan.

Senator PHELAN. I thought we might take advantage of these witnesses here to get such information as we need on that.

Senator WALSH. Perhaps Mr. Pennock might have some views to express concerning the advisability of the Government taking over and operating this Searles Lake deposit itself.

Mr. PENNOCK. Of course, the Government is not versed in the manufacture, and it would take a great deal of time to get an organization together by the Government to operate these plants. There are several already that have been started to produce there; you have the organization, you have all the plans, all the methods, and it is working out satisfactorily on a limited scale.

Senator PITTMAN. I may suggest also another objection to it, as I have had this particular subject under consideration for a long time. That is, that there are by-products that are produced at the same time—for instance, soda—and the Government would have to build up the facilities for handling soda and possibly a certain amount of borax, and it would require the investment of a very large sum of money in the nature of an experiment, because the disposal of these by-products is as essential to the success of the enterprise as the producing of it, and the Government finds that there are too many obstacles in the way of entering into the business of making a market for soda and borax, and yet both of those articles are produced from this lake at the same time as the potash. The plan that the Government has in mind, as I understand it, is that these lessees will be interested in the plant which will produce all three of these products, and that probably the Solvay Co., and some of these other companies, who are now particularly interested in borax and soda, will possibly market the whole product for the benefit of all these lessees and the benefit of the Government.

The bill also provides that the Government may take its portion of the product as a royalty instead of money, if it sees fit, so that it may accumulate and hold a quantity of this potash for the purpose of breaking down a monopoly, if it should arise, or for the purpose of supplying a demand, if unforeseen circumstances should cause cessation of work.

I am just suggesting hastily, but those subjects were all considered and they are a part of the elements that make it very impracticable, at least at this time, for the Government to undertake it. I think the whole proposition would come down to either a proposition of leasing or of location. The trouble about a proposition of location on a liquid deposit, as the Senator from California has suggested, is that there would not be that cooperation in production, reduction, and disposal that would be brought about through leases over which the Government had control.

Senator SHAFROTH. How large is this lake, Mr. Pennock?

Mr. PENNOCK. I think, roughly, it is 8 by 10 miles; something like that.

Senator SHAFROTH. And is that the only potash deposit in California?

Mr. PENNOCK. It is the only one of any importance whatsoever.

Senator SHAFROTH. The only one that would be remunerative to work, you think?

Mr. PENNOCK. Yes; I believe that is so as far as we know.

Senator SHAFROTH. Now, then, the Utah deposit is something of a limited character, is it?

Mr. PENNOCK. Absolutely.

Senator SHAFROTH. It is not in veins, is it?

Mr. PENNOCK. It is in veins.

Senator SHAFROTH. Fissure veins, what you call a crack in the earth?

Mr. MACDOWELL. Yes; true fissure veins, very large.

Senator SHAFROTH. What is the extent of that field?

Mr. PENNOCK. Well, the one vein I happen to know of is located on the surface over a distance of perhaps a mile or a mile and a half. Perhaps not as much as that; perhaps less. But you find it in one place of 7, 8, or 10 feet thickness, and in another place a few inches in thickness, going in and out that way.

Senator SHAFROTH. What is that fissure vein composed of; is it composed of potash and what else?

Mr. PENNOCK. Potash and——

Senator SHAFROTH. What percentage of potash?

Mr. PENNOCK. I should say as you would quarry it for an easy operation it would not run over 10 to 12 per cent.

Senator SHAFROTH. What other deposits are there in there?

Mr. PENNOCK. There is a very large amount of aluminum. There is a large amount of sulphur in the form of sulphate. The potash exists as a sulphate and the aluminum exists as a sulphate, and if you heat it at a high temperature it drives off a certain amount of the gas, SO_3, which usually makes sulphur, and, by the way, that leaves you a residue which contains—it may not be just right in these percentages, but I should say the content of K_2O, potash, would increase 10 to 12 up to 24 or 25 per cent perhaps by the evolution or evaporation of this gas, you see.

Senator SHAFROTH. In this Searles Lake, is this what might be termed a blanket deposit under the lake?

Mr. PENNOCK. Yes; the lake is a basin in shape, you see.

Senator SHAFROTH. And this base, that is in the potash, and some of it dissolves in the water?

Mr. PENNOCK. Yes, sir.

Senator SHAFROTH. And on the edges of that lake could they sink down and find the deposit of this potash?

Mr. PENNOCK. Yes, sir. You drill a well into this body of salt crystal and you get various thicknesses of salt.

Senator SHAFROTH. How thick are the deposits there?

Mr. PENNOCK. Well, of pure salts, I know work that we personally have done on it, perhaps 75 or 80 feet in certain places; other places you go over 100 feet; other places over 200 feet.

Senator SHAFROTH. You mean a deposit in which there is potash?

Mr. PENNOCK. In which there is potash; yes, sir.

Senator SHAFROTH. And the other ingredient is what, principally?

Mr. PENNOCK. The other ingredient is the ordinary salt cake of commerce, used in making glass to a certain extent.

Senator SHAFROTH. How far does this extend over and beyond the edges of the lake?

Mr. PENNOCK. It does not extend at all, because it is all the result of a gradual evaporation over a period of two thousand or three thousand years of water that came into this basin, very dilute in potash and these other constituents.

Senator SHAFROTH. Are there any of them in Great Salt Lake, do you know?

Mr. PENNOCK. Yes; there is a little bit.

Senator SHAFROTH. Outside of those two fields, the one in Nebraska and the one you refer to as containing a number of shallow places——

Mr. PENNOCK. Yes.

Senator SHAFROTH. What is the area of that field that might be considered as the Nebraska field?

Mr. PENNOCK. All those lakes together perhaps would be, roughly speaking—I had not figured it out, but perhaps one-tenth of the area—but they are very shallow and they dry up and can not be counted upon as a perpetual source of potash.

Senator SHAFROTH. It probably would not be taken up by anybody for the purpose of constructing works there?

Mr. **Pennock**. Not beyond the immediate emergency of supplying the present demand at high prices.

Senator **Shafroth**. Are there any other known deposits of potash in the United States?

Mr. **Pennock**. There are two lakes in Oregon which contain potash in very minute quantities, just as in Salt Lake; it is so minute that no one would ever think of producing potash from the water of Salt Lake—going for potash principally. At the present time, of course, in the manufacture of salt they have a mother liquor which can be taken and produced a little.

Senator **Shafroth**. Inasmuch as the deposit in Utah is so different from the deposit in Nebraska and California, are there any other deposits similar to those in Utah?

Mr. **Pennock**. No; absolutely none, as far as I know.

Senator **Shafroth**. Can you give me a theory as to how the deposits in Utah were formed?

Mr. **Pennock**. Oh, I could not say. Of course, it is a highly mineralized district.

Senator **Shafroth**. This thing that you refer to as extending a mile and a half, is it perpendicular or not?

Mr. **Pennock**. No; it is not. It is on an incline.

Senator **Shafroth**. It is on a dip?

Mr. **Pennock**. Yes, sir.

Senator **Shafroth**. Nobody knows how deep it extends—the potash in it?

Mr. **Pennock**. To my knowledge, no, sir.

Senator **Shafroth**. Are they producing much?

Mr. **Pennock**. As far as I know they are producing a small amount.

Senator **Shafroth**. There is no known way, then, of taking up these lands unless it be somewhat under the placer claim, is there, or do you know much about it?

Mr. **Pennock**. I do not know.

Senator **Pittman**. You mean these liquid lakes?

Senator **Shafroth**. Yes.

The **Chairman** (Senator Myers). Senator Pittman, will you take the chair? I have to step down on the floor for a little while.

Senator **Pittman**. Yes.

Senator **Phelan**. Have you any other witnesses to-day?

Senator **Walsh**. There is this other gentleman here.

The **Acting Chairman** (Senator Pittman). While this witness is on the stand I want to read just a short excerpt here from Dr. Manning's report. It is as follows:

> The following recently published quotation of Privy Councilor of the German Empire, Wilhelm Ostwald, is of interest and has a direct bearing on the situation:
>
> "America went into the war like a man with a rope around his neck, which is in enemy's hands and is pretty tightly drawn. With its tremendous deposits Germany has a world monopoly in potash, a point of immense value which can not be reckoned too highly when once this war is going to be settled. It is in Germany's power to dictate which of the nations shall have plenty of food and which shall starve. Germany is in the position, often realized by Bismarck, to handle the long arm of the lever. The dearth of potash, as well as the ever-increasing results of the U-boat war is working in Germany's favor."

Senator SHAFROTH. He does not mean to say there that we can not raise crops without potash, does he? We never have used potash in our country.

The ACTING CHAIRMAN. I believe the statistics on the subject, which will be introduced later, will show that in those sections the fertilizer is required or the crops are reduced one-half, and sometimes more, by a failure of the fertilizer.

Senator SHAFROTH. This statement is pretty much exaggerated because we have our fertile valleys here that never have been exhausted.

The CHAIRMAN. Mr. Charles H. MacDowell will be heard now.

STATEMENT OF MR. CHARLES H. MacDOWELL, PRESIDENT ARMOUR FERTILIZER WORKS, CHICAGO, ILL.

Senator WALSH. By way of introduction, what is your business and how do you happen to have familiarity with this subject?

Mr. MACDOWELL. I am president of the Armour Fertilizer Works, and have visited Germany many times; have inspected some six or seven of the leading German mines which were for sale. I went over there to buy one in 1909.

Senator WALSH. Tell us what the Armour Fertilizer Works are.

Mr. MACDOWELL. They primarily sell the blood and bones produced in slaughtering. They have gotten into the fertilizer business in the last 25 years in a larger way, and have some 30 plants in the United States.

Senator WALSH. So they utilize potash?

Mr. MACDOWELL. They utilize potash in a very large way.

Senator WALSH. Where have they heretofore secured their supply of potash?

Mr. MACDOWELL. They have secured their potash from Germany, until relations were ruptured by the war.

Senator WALSH. About how much did your company annually import?

Mr. MACDOWELL. The company annually used about 20,000 tons of pure potash—20,000 to 22,000 tons.

Senator WALSH. The total importation amounted to how much?

Mr. MACDOWELL. The total importation being about 250,000 tons.

Senator WALSH. About what were you paying for that prior to the war?

Mr. MACDOWELL. Depending upon the grade, from approximately $8 a ton for kainite, containing 12 per cent of potash, to around $35 a ton for muriate, containing 50 per cent of potash, and $42 a ton for sulphate, containing 50 per cent of potash. The value of potash depends on the grade and purity and the use to which it is to be put.

Senator WALSH. You may proceed.

Mr. MACDOWELL. In studying the German situation I went very thoroughly, with the help of a mining engineer and a geologist, into the commercial product over there. The deposit is found in rock salt veins, a salt containing potash in veins of rock salt—probably deposits which came from the sea, produced by evaporation, possibly much the same as Searles Lake, only carried much further along. It is estimated that there is enough potash in Germany to take care of the world's requirements 5,000 years at six times the present consumption. It has been found in a small way in Austria, but up until the beginning of the war Germany had an absolute monopoly in the mining and selling of potash. We broke the monopoly—a number of Americans broke the monopoly at one time. They had a syndicate which ran for five years and expired on certain dates; and certain mills, not content with the return of the total business, sold us the privileges legally. The German Government then stepped in, and, if you recall the potash war running from 1909, to 1911, and they forced us by legislation to give up our contracts; and it cost the United States about $40,000,000, the difference between the price at which we bought and the price we had to pay afterwards in accordance with the settlement made at that controversy.

That caused me to become interested in potash, and after the war started I put out research men. I had a number of men working in research in different things in connection with fertilizer and by-products, and one of the things which I happened to know of through a small deposit was alunite, which is the basis of this Utah development. Together with some friends, personally, and not as a firm, we developed this potash vein and have been producing it for about a year and a half. We are making about 20 tons a day of the potash, suphate of potash, that is practically pure; and we are finding out each day how better to play the villain, so our production is increasing. We have a true fissure vein on our property. We have blocked out about 150,000 tons of ore and have hardly touched the depth. We are down now about 400 feet in depth.

Senator SHAFROTH. You located under the lode mining-law claim 1,500 feet in length?

Mr. MACDOWELL. Yes, sir. We put in a plant which was more or less experimental, but based on the research work we did, and, as I say, we have had to learn how to do it; but we are solving our troubles gradually and are making a sulphate potash which is used largely for tobacco, because it is purer and does not contain certain substances which these other forms do, and is also used in growing of other crops, potatoes, and things of that sort, and is used in a chemical way quite a little bit for making chemical products out of it.

Senator PHELAN. Is it a better fertilizer than the nitrate of commerce?

Mr. MACDOWELL. The nitrate of sodium is a nitrogen which performs another function in the growing of crops.

Senator PHELAN. By itself it is not a satisfactory fertilizer?

Mr. MACDOWELL. No; it forces size, makes corn grow 16 feet high, but does not provide any ears. It makes grain green; when plenty of nitrogen is used everything looks lovely. If you do not mix phosphoric acid and potash, you do not get seed, and your corn and oats will drop over; they have no structural strength. The potash in plant food in the ground gives stiffness to the cell, gives that glaze to the wheat which prevents it from dropping over; it has to do with the development of the cells; has to do with the development of the fruit. You know that in all new countries you get fine fruit, but as the potash works out then the bugs come in and you have troubles. In the South, with cotton, potash is very essential in some sections to prevent certain diseases which cotton has. It has a value aside from its straight, direct food value.

Senator PHELAN. Then it has to be mixed with the potassium?

Mr. MACDOWELL. It is mixed with phosphoric acid from phosphoric rock and various forms of nitrogen.

Senator PHELAN. The Government has recently contemplated the purchase of $10,000,000 worth of nitrate of soda?

Mr. MACDOWELL. Yes.

Senator PHELAN. That would be of no value for the cotton fields unless mixed with potash?

Mr. MACDOWELL. There is very little use in the cotton fields for nitrate of soda as such. They are using it under the form, mostly through the South, as a direct application in forcing the size of corn.

Senator PHELAN. That is not commercially profitable to make a large cornstalk, is it?

Mr. MACDOWELL. No; but ordinarily you can get the phosphoric acid in this country to make it go to seed, but there is a nitrogen shortage to-day. In Germany they use it, have used it until the war, in large quantities of nitrate of soda on their winter wheat. In the spring, when it looks pretty yellow, they go on it with nitrate of soda because that is immediately available; it has been digested and shows results in 48 hours, and they have been the largest users in the world of nitrate of soda on winter wheat. They have a short growing season there and want to get busy.

Senator PHELAN. They are forcing their crops now, I suppose?

Mr. MACDOWELL. As intensively as possible; but, of course, their yield has dropped down on wheat from about 32 bushels an acre to about 17 bushels.

Senator WALSH. Due to what?

Mr. MACDOWELL. Due most largely to a lack of phosphoric acid from phosphate rock.

Senator WALSH. They were heavy importers from Florida?

Mr. MACDOWELL. They were heavy importers from Florida, and also from Christmas Island and from some of the Indian Islands and from the French deposits in Algiers. Now they are making it——

Senator SHAFROTH. You mean the Germans?

Mr. MACDOWELL. Yes; they are making iron slag, of which it is a by-product, and you have to take it out to make good iron, and they are so short of phosphoric acid that they are running a lot of upset furnaces and putting the pig iron on one side to get the phosphoric acid in slag to help out. You see, it is their growing season, and they use very large quantities of phosphoric acid, and a very considerable portion of that they had been getting from southern Florida from our own country.

Mr. MACDOWELL. Of this phosphate there are two fields in Florida—one a pebble field of lower grade. That is mined hydraulically and very inexpensively. The other field is hard rock, big bowlders, and is more expensive to mine, but is all very high grade, and that is the article which went to Europe. Since the war they have not been able to get it and have not got it to any extent, although the Norwegian Government pays as high as $25 up to $50 a ton freight for phosphate rock, which they used to take over for about 12 shillings.

Senator PHELAN. And they have passed it over to Germany?

Mr. MACDOWELL. I understand—I do not know whether it is true or not; I never inquired about that, because that may be a subject which will want to be considered by the Government—but I understand they have been using it themselves. Indirectly, they might grow something, some product. I think a portion might go to these countries, but they are all dependent on phosphate rock for the early maturity of their crops. And in this country it is a very serious question. Right now the State Council of Defense of Ohio has written the National Council of Defense that their experience shows that 100 pounds an acre of phosphate will grow 4½ bushels of wheat, and they are going to recommend 250 pounds per acre in this winter-wheat seeding this fall. We can not supply that. That means 300,000 tons. We have not got the sulphuric acid to make it out of. But I merely mention it to show you the importance of phosphoric acid in increased agriculture and in intensive farming, which we shall have to do.

Senator WALSH. Would you say that a frequent treatment of phosphate would help out the winter-wheat fields in Montana?

Mr. MACDOWELL. Decidedly; very much. That whole section and that Red River section has got to come to the use of fertilizers and quickly come to it. The yield decreases the cost per bushel of growing, and that is what you want for the farmer.

Senator WALSH. And that whole North Dakota country?

Mr. MACDOWELL. That whole section. Iowa is beginning to call for it. They have rich, fertile fields, but they are beginning to use it.

Senator WALSH. There would be a market—you look for a market, then, for phosphate rock and phosphoric acid all over the northwestern grain country?

Mr. MACDOWELL. I think so; and I hope this investigation may stimulate it.

Senator WALSH. You think it could be profitably employed?

Mr. MACDOWELL. I do. All of the States in the East—practically all of them—have made many tests, and the Department of Agriculture has made many tests, and they find a progressive profit up to a certain point and a decreased cost per bushel to grow, and I can not emphasize that too much. You want to have your farmer grow stuff as cheaply as possible; that is the best insurance he has got for profit.

Senator SHAFROTH. With the Utah mine you have, can it be produced there at a very fair and reasonable price?

Mr. MACDOWELL. Well, we have not gotten into it quite far enough to tell. It is mixed up with the utilization of the alumina that can go into brick and possibly other things.

Senator SHAFROTH. What percentage of this do you say was potassium?

Mr. MACDOWELL. The mine run of this vein would average 25 to 30 feet of width, the mine run is close to 10 per cent K_2O, equal to about 18½ per cent sulphate of potash.

Senator SHAFROTH. But what you do get is very pure, is it?

Mr. MACDOWELL. We get a very pure form; yes.

Senator SHAFROTH. Have you examined the lands in the vicinity to see how far this vein extends?

Mr. MACDOWELL. We have had geologists out there for some five years.

Senator SHAFROTH. What is the indication?

Mr. MACDOWELL. There is a considerable extension of the vein, but it seems to be broken up. This particular deposit we have is one of the geological freaks. The vein runs 90 per cent theoretically pure from wall to wall, and the other has a lot of silicate and other deleterious things in it.

Senator SHAFROTH. About how many claims have you taken up?

Mr. MACDOWELL. I think our deposit is on about 8 claims, about 160 acres, 20 to the acre.

Senator SHAFROTH. Has anybody else taken up any claims there?

Mr. MACDOWELL. There has been a plant built for extracting the material. We leach the potash out; we do very much as Mr. Pennock speaks about at Searles Lake, and evaporate it in vacuum cans to get a pure potash.

Senator SHAFROTH. Have you examined to see whether, or have you learned by inquiry as to whether or not, there are any deposits similar to that of Utah elsewhere in the United States?

Mr. MACDOWELL. In that section there are other deposits, but there has not been enough development work done on them to see whether they are paying propositions or not. This mineral is rare, but it comes out there in many stringers and 2-foot veins, and things like that. But some money would have to be spent in real development work to find out. We worked at it three years before we did anything.

Senator SHAFROTH. You started a considerable time before the war, then.

Mr. MACDOWELL. Yes; we did a lot of tunneling and blocking out, a great deal of research work to see what might be made out of it; that is, in a small way, because we wanted first to see whether there was an ultimate value to it; and when the war started we wanted to get some potash.

Senator WALSH. Could you compete with the Searles Lake deposit if opened up?

Mr. MACDOWELL. It is a different kind. The Searles Lake is the muriate and this is sulphate. The sulphate is normally worth five to six times more.

Senator WALSH. So they are not strictly competitive?

Mr. MACDOWELL. They are not strictly competitive, although they both go to the same thing. As I recall, about 30,000 tons are used in the United States and the Hawaiian Islands.

Senator PHELAN. You stated that the United States suffered to the extent of about $40,000,000 by your failure in Germany?

Mr. MACDOWELL. By the German Government forcing us to give up our contract.

Senator PHELAN. That is, you were getting a price over what period of time?

Mr. MACDOWELL. The period of that contract was seven years. We were getting it at about $33 a ton, and we broke the market to about $19, delivered over here.

Senator PHELAN. Then, the German Government arbitrarily cancelled your contract without compensation?

Mr. MACDOWELL. Without compensation. There was a clause in some of the contracts which read, "If any export or import tax or other governmental charge be made, that it shall be borne by the buyer." They took this tack: They figured, first, that they would tax our particular contracts, and our Government very naturally protested. Then they hit upon the plan of declaring potash to be a monopoly and that every producer should have a certain percentage of the total business fixed by the Government, and that any producer that sold more than that fixed allotment should have to pay what they called an overcontingent tax, and they placed that overcontingent tax at a higher price than the miners were getting for the potash which they sold. Then our Government protested at the time that President Taft was signing the Payne-Aldrich differential duty tax that Germany was discriminating against the United States by this proposed law, which was then before the Reichstag, and Count von Bernstorff said, "Very well, gentlemen, if that is what you are afraid of, we will withdraw it," and they did; then President Taft signed the bill, which gave Germany the low duties accorded to any other preferred country. Two weeks afterwards they reintroduced that bill and passed it. That is the history of the potash law. Then they had us.

Senator PHELAN. Our diplomacy was not very effective?

Mr. MACDOWELL. Our diplomacy was brought up to the point whether we should have a tariff war with Germany or not, and we decided not. That is, whether we would tell Germany they would have to pay, unless they abrogated this law, 25 per cent more on all their imports.

Senator PHELAN. You considered it a violation of your rights under German law at the time you made the contract?

Mr. MACDOWELL. Yes, sir.

Senator PHELAN. That may be an argument for confiscating their patent rights on salvarsan and other things. It ought to be remembered.

Mr. MACDOWELL. We had a lot of fun with it. I was over there with the State Department and helped out as much as possible. So far as the Armour concern went, we did not pay them any money.

Senator PHELAN. Who was Secretary of State at that time?

Mr. MACDOWELL. Senator Knox.

Senator SHAFROTH. How many tons was your contract?

Mr. MACDOWELL. Speaking of the sum total, we all bought as a pool.

Senator SHAFROTH. How much was included in all the contracts?

Mr. MACDOWELL. Roughly, at that time about about 220,000 tons of pure potash for export during that period; in other words, the total requirements of the United States, with the exception of a very few other people that went into it.

Senator PHELAN. The price then was immediately put up to about $35 a ton?

Mr. MACDOWELL. When we negotiated again we found we were up in the air and without a ladder to come down on, and we went over and made the best rate we could, and they put us back to about $33 or $34 a ton for muriate; that is the basis of all these other products.

Senator PHELAN. With all their enormous product there, instead of finding a market in the world for the product at a price which would enable you to realize their stuff——

Mr. MacDowell. They are in two dilemmas. They had 52 mines when this thing happened. The potash monopoly made people go into the business. They have got 202 mines to-day. The 52 mines were only running six hours a day on a division of the business at that time, and Heaven only knows how many hours they have been running the 202 mines when they got back. Now they increased their investment in potash in Germany probably $200,000,000 by these extra unnecessary mines put in due to this production on account of this monopoly, so they are in a peculiar position. Then as a part of this law they provided that no potash should be sold on a foreign bill at less than what the German agriculturists could buy it for, so they were in the position where they could not reduce that price outside without reducing it to the German agriculturists or the German chemical man who fabricated it into these different things we are buying from them.

Senator Phelan. They sold it for less money, relatively, I suppose, to the domestic trade than to you?

Mr. MacDowell. No; I think the basis is about the same, figured out about the same. We take much more, as I recall, about 25 per cent of their exports. We are their biggest potash buyers.

Senator Phelan. Then you have no source outside of the American market now?

Mr. MacDowell. No source outside of the American market except a very little that comes in in the form of nitrate of soda; there is some saltpeter in the nitrate of soda which comes in from Chile, but the sum total does not amount to anything.

Senator Walsh. You do not know, then, of any other alunite deposits that would become subject to the operation of this bill, if passed?

Mr. MacDowell. I do not know of any. They are all lode deposits. One mine in Germany is 5,000 feet bore.

Senator Phelan. In what part of Germany?

Mr. MacDowell. In three sections. There is the old section around Statssfurth; the next around Hanover, in Hanover Province; and the third is in the Hartz Mountain section, immediately south, perhaps 60 or 80 miles; I do not know the distance exactly. Then about 12 years ago they were boring for ore in Alsace, about 25 miles from the French frontier, and discovered a potash bed over there. The Amelia mines are there, and you will notice the very stiff resistance of Germany around Mulhausen and that section there; they are protecting those mines. But aside from Germany, there are no deposits of any magnitude except Searles Lake deposits. That is very large. Then there are various by-products picked up from molasses and blast furnaces, which may amount to considerable of this alunite from the sulphate. As I say, we can produce 20,000 or 25,000 tons, if necessary.

Senator Walsh. You would like to see the Searles Lakes deposits develop?

Mr. MacDowell. We should like to see it develop very much.

Senator Walsh. Why?

Mr. MacDowell. Because I think we want, if possible, to get ourselves as independent as possible of Germany, as a national protection.

Senator Walsh. What immediate necessity is there?

Mr. MacDowell. There is a very great immediate necessity this coming spring especially, when cotton and potatoes are absolutely dependent on potash. We whistle and we say we do not need it. In certain sections they do not need it, in certain clay uplands they can get along very well, but as a matter of fact it is a very valuable thing in the fertilization of the soil and it is something we ought to have and in a large way and at a price at which we could afford its distribution.

Senator Walsh. What about its use in the production of munitions?

Mr. MacDowell. In the production of munitions saltpeter is used, which goes into the old black powder and is used for bursting shrapnel shells, as I understand it. They used to make saltpeter during the Revolutionary War and during the Civil War. It is used for curing meats, and one of its uses is in making black powder, and that, I understand, is used as the bursting charge in shrapnel, and it has, of course, other uses. That is the main thing, as far as I know, in munitions. There may be other uses.

Senator Walsh. You spoke about the necessity for phosphates. Are the Tennessee and Florida beds being worked extensively at the present time?

Mr. MacDowell. As fully as can be; yes. That is, aside from this hard-rock section, which is dependent entirely on export, and that, for the time, is a past story. The biggest rock deposits in the world are in Idaho-Utah-Wyoming section. There is nothing known to equal those deposits. I think five and one-half billion tons is estimated in that one particular section.

Senator Shafroth. Where is that?

Mr. MacDowell. In Idaho, Utah, and Wyoming.

Senator Shafroth. That is what?

Mr. MacDowell. That is a phosphate rock. It is the biggest world reserve there is.

Senator Shafroth. How does this phosphate rock exist? Is it in veins or is it a horizontal deposit?

Mr. MacDowell. In Florida it is found just like a gravel bank, in gravel. There will be a lot of this gravel. Instead of the stone being something else it is phosphate of lime, mixed with that sand and a lot of old fossil remains and sharks' teeth and mastodons, and things of that kind, and covered with sand.

Senator Shafroth. How is this field in Utah, Idaho, and Wyoming?

Mr. MacDowell. That is apparently a vein formation.

Senator Walsh. It is a vein, Senator, in the sense that most of it is tilted and it lies between layers of rock, but it is sedimentary in character, not igneous at all. It was a deposit that was laid down in the ocean and then has been tilted up so it looks like a vein, but it is not a vein formation at all.

Senator Shafroth. To what extent does this field in Utah and Wyoming exist? How many square miles are there in it?

Mr. MacDowell. I could not say, but it covers a very large area. I will say four hundred or five hundred miles.

Senator Shafroth. Is it near the surface?

Mr. MacDowell. I think it outcrops on the sides of some of the hills. I have been out there a good many times but I have not visited any of those deposits, but they are large. It is a depository like phosphate of lime, the carbonate has been leached out.

Senator Shafroth. How is that utilized?

Mr. MacDowell. It is taken and ground up very fine then treated with sulphuric acid, which makes the phosphorus available or water-soluble, so the plant can get it right away. In order to do what nature does by freezing and thawing for a thousand years, chewing, we take and grind it finely and mix it with sulphuric acid, and part of the lime leaves the phosphoric acid and makes gypsum, land plaster. That leaves the balance soluble in water and that granular sort of powder is drilled in or broad-casted to make fertilizer.

Senator Shafroth. Is this phosphate or rock usually far from the surface; do you have to dig down to get it?

Mr. MacDowell. You generally do. In the West it is not.

Senator Shafroth. Is it on the surface?

Mr. MacDowell. In Florida it is about 15 feet under the surface, under sand. In Tennessee there are two forms, one broad rock, which is a vein three or four feet in thickness which runs away back from the outcroppings and you mine that as you would anything of that kind. The second deposit in Tennessee, which is the most important one, is just a brown rock, looks like brown sandstone, and is about 6, 8, or 10 feet under a clay covering that is on top. They strip that, go down with shovels, pick it up and run it through an ore crusher and wash the clay out of it and dry it and ship it.

Senator Shafroth. When it is dried that is used as a fertilizer, is it?

Mr. MacDowell. It has to be treated with sulphuric acid; a little is used direct, but only on sour soils or under peculiar conditions. The phosphate rock business, of course, is a very basic business for us.

Senator Shafroth. Is there anything being done now in those fields in Utah and Idaho?

Mr. MacDowell. Very little. They are so far away from where the people have been taught the use of this fertilizer.

Senator Shafroth. Western lands are very fertile, I presume.

Mr. MacDowell. They are not; but they think they are. I was examining a map in the Bureau of Soils the other day, which is just being prepared, showing the consumption per acre of fertilizers, and the parts where they were the most used were marked with black, and the map just gradually gets white as you go west, and when you get out there near the Missouri River that is the end of it, it is almost progressive from the seashore.

Senator Shafroth. What is that rock in Utah and Idaho sold for when it is treated?

Mr. MacDowell. Roughly, I think, when made into fertilizer, at \$2.50 or \$2.75 a long ton. All phosphate rock is sold on a ton of 2,240 pounds.

Senator Shafroth. Can they compete with the Tennessee phosphates?

Mr. MacDowell. No; the ordinary market price for Tennessee is about \$4.50 a ton; the ordinary price for Florida pebble is about \$2.25 to \$2.50, while the Searles Lake is \$2 at the mines, and Florida has got water transportation all along the Atlantic coast. They ship it to Tampe.

Senator SHAFROTH. So at the present time the Utah and Idaho mines can not compete with the Tennessee and Florida mines?

Mr. MACDOWELL. No; not in the selling of the rock. The hope is that they will begin to use fertilizer, and it is certain that they can recover some of these fumes that are getting out as sulphuric acid and make a double concentrated fertilizer.

Senator WALSH. Of course, in the crude rock, the crushed rock, the freight rates are practically phohibitive, except for very intensive cultivation, truck farming and orange growing and that kind of thing. You could scarcely transport much of that for ordinary cereal crops any considerable distance.

Mr. MACDOWELL. You could not carry it very far. That is one reason, in the Southland and in these eastern lands, but more especially in the South, you have to have a great many plants established to save freight. When we go much beyond a $2.25 freight rate we are getting too high, so the idea is we shall have to go to small producing units in order to cover this territory and reach these sections.

Senator WALSH. By treating rock with sulphuric acid can you thoroughly concentrate it and reduce it so as to have a high acid content?

Mr. MACDOWELL. The Anaconda people are figuring something on that line and they can carry it some distance. Personally I do not think they can get to the southern country, because they get right in competition with the Tennessee rock. But I do think that when the propaganda is properly carried out there will be a very large use for this product in the Red River Valley, and especially in the orange sections, where intensive cultivation is the rule, that they can get to that territory.

Senator WALSH. I thought it advisable to submit some more specific information concerning the oil situation on the Pacific coast, but the testimony has not been assembled yet, and if you can take an adjournment until Friday, I should like to ask some witnesses to come and tell you about that at that time.

Senator SHAFROTH. Senator Smoot is very much interested in this matter and I should like to confer with him and see if we can not get an agreement as to a time for a meeting when he can attend.

The ACTING CHAIRMAN. Suppose we adjourn until Friday and the secretary can notify the members of the committee and see if there is any objection, and if so, then adjourn it to a later date.

Senator SHAFROTH. I do not know whether Friday will suit us exactly, but I will try to find out to-day and let Senator Myers know whether Friday will be satisfactory, and if not, Saturday. I think probably we could make it Saturday.

The ACTING CHAIRMAN. That is satisfactory, then.

I desire to place in the record a letter from the Secretary of the Interior to the chairman of this committee bearing upon the subject now under consideration.

(The letter referred to above is here printed in full, as follows:)

DEPARTMENT OF THE INTERIOR,
Washington, May 11, 1917.

MY DEAR SENATOR: I am in receipt of your request for report upon S. 2158, a bill to authorize exploration for and disposition of potassium or sodium.

The measure appears to be identical with sections relating to potash in H. R. 406, Sixty-fourth Congress, first session, as reported by the Senate Committee on Public Lands May 18, 1916. Said H. R. 406 also provided for the development and disposition of deposits of oil, gas, and phosphate, and I am of opinion that legislation providing for and encouraging the development of all of these deposits should be had at the earliest possible moment as a war measure.

Potash is an essential in the production of food and cotton and essential in the manufacture of certain munitions of war. I am advised that in 1913 the United States imported approximately 529,000 tons, while the domestic production was 400 tons, and that during that year about 20,000 tons of potassium chloride were used in the industries and about 500,000 tons in agriculture. In 1916 the importation of potash was only about 10,000 tons and the domestic production in the neighborhood of 16,000 tons; 130,629 acres of public lands containing this mineral are withdrawn from development. This area includes Searles Lake, Cal., one of the largest known deposits. I am informed that two reduction plants have recently been completed on the shores of the lake and that they have direct railroad connections, and can not only start work immediately, but can increase their capacities if authority for the development be given.

Phosphate rock is present in large and valuable quantities in the public lands of Idaho, Wyoming, Utah, Montana, and Florida, and approximately 2,400,000 acres containing such deposits are at present withdrawn. This mineral also is an exceedingly valuable element of fertilization of farm lands, and the supply at reasonable prices would greatly stimulate our agricultural production.

Gasoline and oil are necessary for the use of both the Army and Navy in the prosecution of the war, as well as for domestic use in the propulsion and lubrication of farm machinery and motors used for domestic purposes.

The California Oil World of April 19, 1917, states that the shortage in the California fields is approximately 40,000 barrels per day. In the Oklahoma fields last month the demand exceeded the production by 58,000 barrels; that is, the demand is exceeding the production by those amounts, and it is necessary to withdraw from existing storage. A shortage of fuel oil will not only threaten the efficiency of the operations already described but of western railroads which are equipped with oil-burning engines and might necessitate the shutting down or restriction of output of the great copper mines.

Cordially, yours,

FRANKLIN K. LANE,
Secretary.

Hon. HENRY L. MYERS,
Chairman Committee on Public Lands, United States Senate.

(Thereupon, at 1.45 o'clock p. m., the committee adjourned until Saturday, June 16, 1917, at 10 o'clock a. m.)

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LEASING OF OIL LANDS

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HEARINGS

BEFORE THE

COMMITTEE ON PUBLIC LANDS
UNITED STATES SENATE

SIXTY-FIFTH CONGRESS
FIRST SESSION

ON

S. 45

A BILL TO ENCOURAGE AND PROMOTE THE MINING OF
COAL, PHOSPHATE, OIL, GAS, POTASSIUM, AND
SODIUM ON THE PUBLIC DOMAIN

JUNE 16, 1917

PART 2

Printed for the use of the Committee on Public Lands

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1917

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UNIVERSITY OF ILLINOIS
FEB 18 1919

LEASING OF OIL LANDS.

SATURDAY, JUNE 16, 1917.

UNITED STATES SENATE,
COMMITTEE ON PUBLIC LANDS,
Washington, D. C.

The committee met, pursuant to adjournment, at 10 o'clock a. m., in the committee room, Capitol, Senator Henry L. Myers presiding.

Present: Senators Myers (chairman), Pittman, Ransdell, Phelan, Husting, Shafroth, Jones, Norris, Sterling, and Brady.

The committee resumed the consideration of the bill (S. 45) to encourage and promote the mining of coal, phosphate, oil, gas, potassium, and sodium on the public domain.

The CHAIRMAN. The committee will come to order.

Senator WALSH. Mr. Chairman, the special reason for which an adjournment was taken last Wednesday was to get some information from the Commissioner of the General Land Office concerning the Searles Lake deposit. The commissioner has not yet arrived. There are a couple of witnesses here who can tell us more definitely than we have yet heard concerning the oil situation on the Pacific coast. If it is agreeable, I suggest, therefore, that we call Mr. Requa, of San Francisco.

The CHAIRMAN. Very well, we will hear Mr. Requa.

STATEMENT OF MR. M. L. REQUA, OF SAN FRANCISCO.

Senator WALSH. Mr. Requa, what is your business?

Mr. REQUA. I am a mining engineer.

Senator WALSH. How long have you been practicing that profession?

Mr. REQUA. For twenty-odd years. I specialized in the last 10 years to a considerable extent in oil.

Senator WALSH. In what section of the country?

Mr. REQUA. In California.

Senator WALSH. Will you go on, Mr. Requa, in your own way and tell the committee about that?

Mr. REQUA. May I qualify first as an expert?

Senator WALSH. Yes; go ahead.

Mr. REQUA. I am consulting engineer for the Bureau of Mines on petroleum and was chairman of the valuation committee of the Independent Oil Producers' Agency of California, in which capacity we valued some 150 oil companies for the purpose of consolidation, which consolidation, however, never took place.

Senator WALSH. Let me ask you if you are in any way interested in claims involved in controversies between the claimants and the United States Government in the State of California?

Mr. REQUA. I am president of the Nevada Petroleum Co., which owns 800 acres of oil territory in the Colingo fields. That land, however, is in no way in dispute, and we are producing oil continuously without controversy. As to the land involved in withdrawal orders, I am in no way interested in that. In fact, I have purposely avoided getting into this controversy in any way.

Senator WALSH. Your property is not within the naval reserve?

Mr. REQUA. It is not within the withdrawn areas.

Senator WALSH. Will you now go on, Mr. Requa?

Mr. REQUA. Just what is it you wish, Senator Walsh?

Senator WALSH. I would like to have you tell the committee, in a general way, the present production and the present consumption of oil and the stocks on hand, and the extent and rapidity with which stocks are depleted, and generally about the oil situation on the Pacific coast.

Mr. REQUA. All right, sir.

California has, since the withdrawal, been experiencing a revival of the oil industry. With the bringing in of the Midway field, there was an excessive production, or overproduction, of oil, reaching as high as 60,000 or 70,000 barrels a day. Stocks of petroleum on hand rose from practically nothing to something in excess of 50,000,000 barrels. Due to the withdrawal of certain lands and the refusal of the Government to permit operations upon those lands, coupled with the normal decline of the fields, there came about an acute shortage, rendered more so by the increasing demand for oil. Stocks of oil have been steadily decreasing during 1916 and 1917. The decrease during 1916, if I remember correctly, approximated 30,000 barrels per day. At the present time it is running 40,000 barrels per day or more. I am giving these figures from memory, but I do not think they will be found far wrong.

In order to carry on the business of transporting and marketing oil, there will be required, in pipe lines, terminal tanks, line tanks, and similar receptacles, a volume of oil that has been estimated to be somewhere between fifteen million and twenty million barrels. In other words, when you get below that figure, you are going below the danger point. The present rate of decline has been varying between a million and a million and a half barrels a month.

Senator HUSTING. Is that a decline in the yield?

Mr. REQUA. That is the decline in stocks. The shortage, as I say, is between a million and a million and a half a month, varying from month to month.

Senator WALSH. Did the decline arise by reason of reduced production, or by reason of increased consumption?

Mr. REQUA. It is because of increased consumption.

Senator WALSH. The production has not decreased?

Mr. REQUA. The production has somewhat increased.

Senator SHAFROTH. You say that has produced a decline in the price of stocks?

Mr. REQUA. Oh, no; a decline in the volume of stocks, the total number of barrels of oil in storage. Unless there is some means found for replenishing those stocks by drilling in some of the lands that are now in controversy, it is quite possible that a very acute commercial crisis will face the Pacific coast. The Southern Pacific Railroad recently sent out a circular letter asking the different companies if they had oil for sale, and if so, at what price they would sell it. While the nominal quotation for oil is 78 cents, or was when I left California—78 cents per barrel at the well—I understand the Southern Pacific has paid as high as $1 and $1.10 for oil for their purposes.

Senator STERLING. That is crude oil at the well?

Mr. REQUA. That is crude oil at the well; yes, sir. Their consumption approximates 40,000 barrels a day. If you will translate that into coal, you will get somewhere in the neighborhood of 12,000 tons of coal per day. I do not know how or where the Southern Pacific could supply itself with 12,000 tons of coal a day at the present time. All of their old facilities for handling coal have been discarded. They are equipped for handling nothing but oil, and unless they can find some means shortly of replenishing their oil stocks I think there is a grave question as to what is going to happen.

Senator STERLING. Whence arises the increased consumption, mostly?

Mr. REQUA. Due to activities in all manufacturing and allied industries on the Pacific coast. There has been in the past a great deal of California oil shipped to South America, but because of the shortage in California arrangements were made some time ago whereby the Union Oil Co. contracted that those South American contractors get oil from Mexico and have it delivered in place of taking oil from California.

Senator WALSH. Is there any shipment of oil from the eastern and midcontinent fields to the Pacific coast?

Mr. REQUA. No, sir; there is not. On the contrary, there is a shipment from the Pacific Coast of certain refined products from California oils that are being shipped this way.

Senator WALSH. Is that a recent movement?

Mr. REQUA. No, sir; that has been in existence for some years. That is lubricating stocks and asphaltum. There has been no shipment of crude oil, so far as I know, to eastern points.

The volume of oil in California and the probable production has undergone some very drastic cuts in estimates within the last few years. The United States Geological Survey made some estimates a few years ago that have been materially reduced since then, and at the present time it seems there is no source of known supply other than within these withdrawn areas.

There is another phase of the case, and that is the lack of oil-well supplies. Oil-well pipe is very high. The last that I bought before the war I paid $1.60 for, and a quotation the other day was $4.

Senator NORRIS. What size pipe?

Mr. REQUA. Ten-inch and 10½ inches.

Senator NORRIS. Is that the ordinary size of pipe?

Mr. REQUA. They use various sizes up to 15 inches, and in some wells they put two or three strings of pipe in.

Senator NORRIS. How small does it go down?

Mr. REQUA. Down to 4¼ inches.

It is obvious that the quickest way to produce oil is to produce it from territory that will yield the largest amount per well. It is possible to drill wells in some of the old fields. There is still territory undrilled, but the yield per well will not be large. For instance, in the Kern River field, I suppose if you get 15 or 20 barrels in a new well you would be getting a fair well. In much of this withdrawn area you may get a well that will run up from 100 barrels a day, with the possibility of running into a gusher that will yield two or three thousand, so that the quickest way to replace the exhausted stocks is by permitting drilling in some of the areas now withdrawn.

Senator **Walsh**. Speaking of withdrawn areas, how does the area on the so-called naval reserve compare with the total withdrawn areas?

Mr. **Requa**. I have not at hand the total area of withdrawn lands in acreage or figures, but under date of December 16, 1916, I wrote a letter to Lieut. Commander Landis, officer in charge of naval petroleum reserves in San Francisco, stating the situation as I saw it. I will say that the occasion for this was that Admiral Edwards, who was the first chairman of the naval liquid-fuel board, asked me to obtain certain information. This is contained in Senate Document No. 363. The article is entitled "The exhaustion of the petroleum resources of the United States," which I wrote in my capacity as consulting engineer of the Bureau of Mines. I felt very keenly at the time about the vital bearing that the oil situation had upon the commerce and life of the American Nation. So when Admiral Edwards wrote me and asked me whether I would gather certain data I was very glad to do it, but because of his being superseded in connection with that board I addressed this letter to Lieut. Commander Landis, who was in San Francisco in charge. It is a complete résumé of the situation regarding naval reserves Nos. 1 and 2 and gives the area in acres, patented and unpatented ground, and shows the ownership in both the reserves, but I have nothing at hand that would give the total number of acres within the withdrawn area. Much of that withdrawn area, of course, is not in all probability oil land.

Senator **Sterling**. When you speak of the acreage of unpatented ground you mean the ground on which oil operations were carried on at the time?

Mr. **Requa**. Yes, sir; there was some operation on this land.

Senator **Sterling**. That is, the locations had been made?

Mr. **Requa**. Yes, sir; the location had been made, and there was some work undertaken.

Senator **Walsh**. What facts are given in the document to which you refer, speaking generally of it?

Mr. **Requa**. I can read them to you, sir.

Senator **Walsh**. I refer to the document already printed.

Mr. **Requa**. Oh, that one there [indicating]?

Senator **Walsh**. Yes, sir.

Mr. **Requa**. It is an argument to show that the oil resources of the United States are entirely inadequate to the future demands of the Nation.

Senator **Shafroth**. Do you mean for the Navy or for commerce generally?

Mr. **Requa**. For everything. I have simply taken statistics and estimates of the Geological Survey and correlated them and construed them as I saw them. In giving the survey in Senate Document No. 310, February, 1916, the Geological Survey corrected the previous estimate made in 1909 and ignored their maximum estimates of oil in the United States, increasing their minimum by a billion barrels and deducting 3,333,000,000 as the quantity already extracted or the amount produced, leaving available from the known deposits 7,620,000,000 barrels.

Senator Shafroth. That is, in the ground?

Mr. Requa. Yes, sir.

In 1904 the United States produced 117,000,000 barrels; in 1914 it had risen to 266,000,000. Assuming the annual increase requirement of 5 per cent of the previous year's production, there would be required approximately 400,000,000 barrels in 1925. So far as is known, the only oil fields that are susceptible of future increase are the Midcontinent, the Gulf, and California.

Senator Shafroth. What do you estimate, in round numbers, as the quantity of oil in the California fields?

Mr. Requa. That is an extremely difficult question to answer.

Senator Shafroth. Did this estimate of the Geological Survey subdivide the United States into parts?

Mr. Requa. Yes, sir; it did.

Senator Shafroth. Do you remember what was their estimate as to the quantity in California?

Mr. Requa. Yes, sir; it is given here. For California they estimated a minimum of 5,000,000,000 and a maximum of 8,500,000,000, but they materially reduced that. I do not know what they would set it at now, but they would reduce it below that minimum of 5,000,000,000 barrels.

Senator Husting. Have you figured out how long that supply would last at this estimated increase?

Mr. Requa. If you take the present rate of consumption, without any allowance for any increase whatever, assuming the annual consumption to remain stationary—that is, at 266,000,000 barrels—there is enough known oil to last 28 years.

Senator Norris. That is a false assumption, is it not?

Mr. Requa. Now, even if you assume that there will be found and developed in the United States oil areas equaling in extent those that have already been found and that are known, or, in other words, if you double the total quantity of oil and admit that the production in 1925 would be 400,000,000 barrels, you have enough oil to last approximately 40 years.

Senator Husting. How long would the known oil, or the estimated quantity of these fields now known, last if you assume that there will be a 5 per cent increase, as you have said?

Mr. Requa. I did not calculate that. As I remember it, something like 15 years.

Senator Phelan. What has been the increase in consumption the last five years?

Mr. Requa. The increase from 1904 has been considerable. The amount in 1904 was 117,000,000 barrels. That rose to 266,000,000 barrels in 1914. My assumption was based on the entire period of production of oil. I did not assume really. I got it by calculating on a figure slightly in excess of the 5 per cent. I used 5 per cent here as a conservative figure, based upon the past rate of increase in production.

Senator **Phelan**. Five per cent of the previous year's?

Mr. **Requa**. An increase of——

Senator **Phelan** (interposing). You figured that as an estimated quantity?

Mr. **Requa**. I took that figure because it very nearly approximated the curve of increase in the past.

Senator **Phelan**. Now, as to the future, will not the increase be accelerated?

Mr. **Requa**. Personally, I believe it will, but the situation was so bad I thought that there was no necessity for making it any worse in order to call attention to it, so I assumed a figure that, in my judgment, was very conservative.

Senator **Phelan**. A witness stated at the last hearing that the Southern Pacific Co. of California had made a demand for 67,000 tons of coal a month. Is the fear of the railroads that the oil supply will be deficient in the future?

Mr. **Requa**. The Southern Pacific is burning oil from El Paso to Portland, Oreg., and east, I think, as far as Ogden.

Senator **Phelan**. Their action would indicate that they were very apprehensive.

Mr. **Requa**. Very. They do not know where they will get oil at the present time. They are tied up in their drilling on a great deal of their land.

Senator **Sterling**. How long have they been using oil in the running of their trains?

Mr. **Requa**. The exact date I do not know, but it is 12 or 15 years.

Senator **Phelan**. If all industries had the same apprehension, it would be demoralizing to manufacturers as well as to railroads, would it not?

Mr. **Requa**. My own belief is that unless some action is taken permitting drilling upon the lands now in dispute, there will be an oil famine on the Pacific coast, which will be nothing short of a paralysis of the commerce of the coast.

Senator **Phelan**. In what length of time?

Mr. **Requa**. Well, I think within the next 12 months. You see, the Pacific coast is very poorly supplied with coal. We have none in California.

Senator **Norris**. This drilling for oil, if permitted, will only postpone that calamity for a time, will it not, according to the figures?

Mr. **Requa**. There would be a time when the oil would be exhausted.

Senator **Norris**. In a reasonable number of years?

Mr. **Requa**. Yes; in a reasonable number of years.

Senator **Norris**. In the life of the business man of to-day?

Mr. **Requa**. My personal belief is that the ultimate move of the Southern Pacific Railroad will be to convert to electricity. It will be a case of hydroelectric power generated in the mountains——

Senator **Phelan** (interposing). Stored?

Mr. **Requa**. No, sir; carried by wire and used.

Senator **Phelan**. That is only done in suburban traffic, is it not?

Mr. REQUA. The Milwaukee Railroad is carrying clear through to the coast, but it will take many years to make that conversion. They can not do it under present conditions.

Senator HUSTING. Are there any other countries from which we can purchase oil?

Mr. REQUA. You have asked a question that opens up what, in my mind, is a very important issue.

Senator WALSH. If you will pardon me, Mr. Chairman and Senators, Mr. E. L. Doheny has promised to be here to-day and give us the benefit of his extensive acquaintance with this subject. He is able to speak definitely, I think, concerning outside sources of supply. He operates in Mexico.

Senator PHELAN. You are aware, Senator Walsh, that Mr. Dohenia can not be here to-day?

Senator WALSH. Yes.

Mr. REQUA. The greatest known source of supply to-day is the east coast of Mexico. Mr. Doheny has in his property what probably is the largest supply and the most prolific area in Mexico. Next to him comes Lord Cowdrey, a British concern.

I was so impressed with the vital bearing that that Mexican oil had upon the problem of the United States that some few years ago I endeavored to effect the consolidation of the independent oil producers of California, the Union Oil Co., and the Mexican Petroleum Co., believing that in the Mexican Petroleum Co. there was a supply of oil that would meet the requirements for a very considerable period of time to come. While it is entirely and utterly impossible to accurately estimate the probable oil content of the lands belonging to the Mexican Petroleum Co., Mr. I. C. White, State geologist of West Virginia, has made a tentative estimate, giving them a quantity of about a billion and a half barrels in excess of the total production of the United States up to date. Those Mexican wells will produce anywhere from 5,000 up to 75,000 or 100,000 barrels per well per day, and they have almost unlimited possibilities.

Senator SHAFROTH. What was that total amount produced in the United States up to date?

Mr. REQUA. Three billion three hundred and thirty-five million barrels. That was up to February, 1916.

Senator SHAFROTH. That amount has been produced and consumed in the United States?

Mr. REQUA. Yes.

Senator PHELAN. The Carranza order of a few days ago will affect production of oil in the Tampico field, will it not?

Mr. REQUA. May I add just a word to what I was about to say?

Senator PHELAN. Of course. I thought you had concluded.

Mr. REQUA. No. That combination was blocked by the English oil interests. Three days after the president of the board of trade, in the House of Parliament, made a speech, in the course of which he said that it had been the policy of England in the past to control, as far as possible, the coal resources of the world, and it would be their policy in the future to control the oil resources of the world. Unless the United States takes some action that will encourage and protect Americans in searching for oil in Central and South America and see to it that these sources of supply are safeguarded, it is quite conceivable, in my mind, that we will become in time entirely under the dominion of some foreign country, so far as our oil and our lubricants are concerned. I said that very thing in this pamphlet. I said: "When it is too late we will awake to the fact that the oil resources of the world are in foreign hands, and that, so far as its lubricants are concerned, the United States has become the vassal of some foreign power."

The statement has been made that we could produce oil from oil shale. That is true. The quantity of oil shale in the United States is enormous. It has been stated that the known shale would produce a volume of oil materially in excess of the present total production of oil from our oil fields.

Senator Shafroth. That is the total past production?

Mr. Requa. The total past production.

Senator Shafroth. Of 3,335,000,000?

Mr. Requa. Yes, sir.

Senator Shafroth. What length of time does that cover?

Mr. Requa. From the discovery of oil in the United States.

Senator Shafroth. In what year?

Mr. Requa. 1857, I think, is the date. No; that is the world's production. In 1859 we started in with a production of 2,000 barrels.

Senator Husting. Don't you think it would be wiser to draw our oil in part from the developed fields than to exhaust the supply at home?

Mr. Requa. May I complete my statement?

Senator Husting. Yes; certainly.

Mr. Requa. Yes, sir; but a price considerably in excess of the United States, a quantity equal to the present production of 266,000,000 barrels, you will have a shale-mining industry that will be producing daily more tonnage than the total tonnage of coal being produced in the United States at the present time, so you can see what it means to start that enterprise.

Senator Shafroth. Can it be successfully done, commercially?

Mr. Requa. Yes, sir; but a price considerably in excess of the present selling price of oil.

Senator Shafroth. Then, it would not be a successful commercial enterprise at the present price?

Mr. Requa. No, sir; not at the present prices. Technically, it can be done; commercially, it can not be done and compete with oil under present conditions.

Senator Phelan. It is a matter of last resort?

Mr. Requa. Yes, sir.

Senator Shafroth. At what price can oil be extracted from shale?

Mr. Requa. I am not able to say.

Senator Norris. Would there be any value to the shale outside of the supply of oil?

Mr. Requa. No, sir; not after they had extracted the oil.

Senator Shafroth. What would they have to do?

Mr. Requa. They simply heat it in a retort.

Senator Norris. The shale is all lost?

Mr. Requa. Yes, sir.

Senator Norris. You can manufacture cement, can you not?

Mr. Requa. I do not know whether it can be used for that or not.

Senator SHAFROTH. What do they use it for now?

Mr. REQUA. Not for anything. There are large deposits in Utah.

Senator SHAFROTH. They reserved a great many thousand acres in Colorado.

Mr. REQUA. Yes; in that area there.

Senator PHELAN. It is a question of production and transportation, is it not?

Mr. REQUA. There is no transportation there at the present time.

Senator SHAFROTH. Yes; that is right. The Moffatt road approaches there, but it has never been put through.

Mr. REQUA. No, sir.

Senator HUSTING. Do you not consider it wiser to try to obtain some interest in the foreign fields, such as Mexico and South America, rather than exhaust the supply at home and then be forced to go abroad?

Mr. REQUA. I think for the present you must utilize your domestic supply, and while you are doing that take the necessary steps to build up the foreign sources of supply. There is a very large field, or presumably a very large field, in Bolivia that is absolutely inaccessible. It would require an investment of a great deal of capital to do anything with it at all.

Senator JONES. To what extent have the probable fields in the United States been prospected?

Mr. REQUA. That, of course, is a very difficult question to answer. I do not know, but I have assumed for my own purposes that the total oil fields in the United States to be discovered could hardly equal or exceed those that are already known.

Senator JONES. What is the basis of that assumption?

Mr. REQUA. The inspection of the Geological Survey maps showing the outline of the oil areas as known and discussions with the members of the Geological Survey.

Senator JONES. Have you, in that assumption, included the land in New Mexico?

Mr. REQUA. That is the western rim of the basin in which the Texas production is now taking place. Yes, sir; those have been considered. Of course, from the very nature of the situation, it is very difficult to formulate an accurate statement as to the probabilities, but I have been guided by a desire to safeguard the situation to the extent there would be no question about the supply of oil so far as the United States was concerned, just as I have in this letter that I have written here to Lieut. Commander Landis regarding the naval liquid fuel reserves in the State of California.

Senator NORRIS. How much crude oil do we use to supply the country with lubricants? What proportion of the oil supply goes into lubricants?

Mr. REQUA. I have not the figures, but a very large percentage of the oil is put through some refining process, and something is taken out of it before the residuum is finally burned.

Senator NORRIS. The Southern Pacific Co. do not do that, do they?

Mr. REQUA. The Southern Co. have an arrangement, or had an arrangement, with the Standard Oil Co. whereby they exchanged their production of light oils for the heavy residuum of the Standard Oil Co., receiving a bonus, and they burned the residuum of the Standard Oil, and the Standard Oil refined the lighter oils.

Senator **Norris**. That is, they burned what the Standard Oil Co. had taken something out of?

Mr. **Requa**. They burned what the Standard Oil Co. has taken gasoline, kerosene, etc., out of.

Senator **Norris**. Would not that be one method of conservation?

Mr. **Requa**. In answer to that, I call attention to the report of the Secretary of the Interior of 1915, in which it is said:

> An absolute government would prohibit a barrel of it being used for fuel before every drop of kerosene, gasoline, and other invaluable constituents had been taken from it.

Senator **Husting**. Have any new fields been discovered in recent years in the United States?

Mr. **Requa**. The Oklahoma fields and the Texas fields are the most recent fields of large magnitude.

Senator **Husting**. How long since they have been opened?

Mr. **Requa**. I do not remember the date of the discovery of the Oklahoma fields. I am not familiar with conditions there.

Senator **Sterling**. Have not some new fields been discovered there?

Mr. **Requa**. I think we can get that out of these tabulations here [indicating].

Oklahoma started in 1900. They produced 6,400 barrels; then it rose to 37,100 in 1902, 138,911 barrels in 1903, and then it jumped up to 1,266,000 barrels. Then it jumped again to 43,000,000 barrels——

Senator **Jones**. What is the date of the Wyoming fields?

Mr. **Requa**. The Wyoming field produced in 1895, 3,455 barrels. Before that, in 1894, it produced 2,369 barrels. It ran along then with an insifinificant production up to 1910, when it produced 115,000 barrels, and in 1914 it produced 3,560,000 barrels.

Senator **Sterling**. Have you figures for later than that year?

Mr. **Requa**. No, sir.

Senator **Jones**. Give us for the year 1910.

Mr. **Requa**. In 1910 they produced 115,000 barrels, as against 20,000 the year before.

Senator **Shafroth**. Are these oil fields throughout the United States known as distinct districts? In other words, is there any such thing as a Pennsylvania oil field?

Mr. **Requa**. The fields are divided into the Appalachian. That includes the Pennsylvania and down through West Virginia, Lima, Ind., Illinois, Mid-Continent, Gulf, California, and minor fields.

Senator **Shafroth**. What is the total production of that field for the year—the last that you have there?

Mr. **Requa**. It is separated into States. Take the State of Pennsylvania: Pennsylvania reached the zenith of her production in 1891 with 33,000,000 barrels; in 1914 is dropped back to 9,000,000.

Senator **Shafroth**. What is that document? What is that called?

Mr. **Requa**. Petroleum Resources of the United States. It is Senate Document 363.

Senator **Shafroth**. What Congress?

Mr. **Requa**. The Sixty-fourth Congress, first session.

Senator **Shafroth**. You started some time ago to state how much land was withdrawn as oil land in the United States. Can you tell us how much that is?

Senator **Walsh**. If you will pardon me, Senator, the commissioner was asked to give us the exact figures.

Senator **Phelan**. If you are through with the domestic supply for a moment, I wish to ask you a question. You said that you had endeavored to make a consolidation of the independent oil producers of California with the Tampico fields.

Mr. **Requa**. With the Mexican Petroleum Oil Co.

Senator **Phelan**. You said that that was stopped by English interference. What form did that interference take?

Mr. **Requa**. One of the largest stockholders in the Union Oil Co.——

Senator **Shafroth** (interposing). Of what State is that a corporation?

Mr. **Requa**. The Union Oil Co. of California, one of the largest stockholders, is an English syndicate, represented by Andrew Weir, who has large shipping interests. I think, perhaps, it is one of the largest, if not the largest, shipping house in England. It was necessary for me to secure the consent of Mr. Weir for this consolidation to become effective, and I never got it.

Senator **Phelan**. Doubtless his opposition was inspired by the English Government, as announced by the gentleman to whom you referred a while ago.

Mr. **Requa**. I do not know. I do know that Walter Runciman, president of the board of trade, did make that speech in the House of Commons a few days afterwards—or before.

Senator **Phelan**. Was there not a voluntary contract made by the Petroleum Products Co., within the last year, agreeing to deliver 50,000 barrels a day?

Mr. **Requa**. I am not familiar with that at all.

Senator **Phelan**. Is it not true that England is now using almost exclusively for its navy the Tampico field?

Mr. **Requa**. I presume they do; although I have been under the impression that they have been getting some from the United States.

Senator **Walsh**. Senator Phelan, Mr. Doheny informs me that that is not the case, but by reason of some kind of an arrangement all of the Mexican export comes to the United States, is consumed here, and that an equal quantity is taken out of the Appalachian field and exported to Great Britain.

Senator **Phelan**. It is tantamount to the same thing; that is to say, if the Tampico field failed, the United States would not deliver from the Appalachian fields.

Senator **Walsh**. There would be an additional drain upon the Appalachian fields and the Gulf fields.

Mr. Requa, you said to Senator Hustings that, in your judgment, for the present, the domestic supply should be relied upon?

Mr. **Requa**. Yes, sir; it must be.

Senator **Walsh**. Why not go to Mexico now and get what we need?

Mr. **Requa**. You have not the facilities to do it with. You have transportation and marketing facilities in the United States, but not in Mexico.

Senator **Walsh**. What facilities are needed.

Mr. **Requa**. Pipe lines, oil tanks, terminal facilities, and storage of all kinds, and ships.

Senator WALSH. What is the trouble about installing all these necessary pipe lines, terminal facilities, and all of that kind of thing down in Mexico?

Mr. REQUA. We have not got any guaranty as to what the Mexican Government is going to do.

Senator PHELAN. What was the last order? How is that going to affect the situation?

Mr. REQUA. I do not know.

Senator PHELAN. You know the terms of the order?

Mr. REQUA. I do not know them.

Senator NORRIS. I would like to ask you a question, Mr. Requa. Does the British Navy, in getting this oil, get crude oil, or do they do like the Southern Pacific Co.?

Mr. REQUA. They get some refined product in all probability.

Senator NORRIS. What does our Navy do? Do we use the crude oil?

Mr. REQUA. I do not know.

Senator HUSTING. I understand that the Navy does not use crude oil.

Mr. REQUA. The light gravity oils are unfit for burning until they have been refined. It is only the heavy oils of Texas and California that are fit for burning.

Senator NORRIS. Which has the most kerosene?

Mr. REQUA. The eastern oils and the light Oklahoma oils. You take the oil which I am producing in California, for instance, an oil that without preliminary treatment carries 16 per cent of the highest grade of engine oil. That is being burned.

Senator NORRIS. You are burning it up; is there not some remedy for that?

Mr. REQUA. Well, that should not be done. There is only one remedy, however, and that is to provide means for refining those oils. To that extent the Standard Oil Co. is better conserving the oils of the United States than any other concern.

Senator NORRIS. It is profitable to do that?

Mr. REQUA. I think they would all do that, but in order to refine oil you must have a large corporation.

Senator NORRIS. You mean it takes a large amount of capital, do you?

Mr. REQUA. It takes a large amount of capital to handle it.

Senator NORRIS. How large a capital to handle it?

Mr. REQUA. The economic unit of pipe-line transportation in California is 25,000 barrels a day.

Senator NORRIS. Crude oil?

Mr. REQUA. Yes, sir. It is utterly impossible for a small corporation to go into the refining business.

Senator SHAFROTH. The Texas fields some 8 or 10 years ago were regarded as wonderful. Are they fading down to no production now?

Mr. REQUA. They are not producing what they were, although they are susceptible of great production even yet. Texas had its high point in the year 1915, when it produced 28,000,000 barrels. In 1914 it produced 20,000,000 barrels. I think 1915 is in excess of that.

Senator SHAFROTH. If that order of Carranza's is not too long, Senator Phelan, would you mind reading it and then let us have the comment of the witness upon the effect of it?

Senator **Phelan.** If there is no objection, I will be very glad to do it [reading]:

Senator **Walsh.** Senator Shafroth, if you will permit me to make the suggestion—I wish to say that there are a number of witnesses who were asked to come here to testify and who would like to be heard so that they may leave as quickly as possible. In view of that fact, can not we dispense with the reading of that order for the present and have it inserted in the record?

The **Chairman.** Let it go into the record in full. Let it be furnished to the stenographer for that purpose.

Senator **Shafroth.** I think it is important that we should take the matter under consideration.

The **Chairman.** Mr. Kelley is waiting to get away on other business.

Senator **Jones.** I have just been informed that in this paper [indicating], which is a memorandum to the Director of the Bureau of Mines, is the substance of that decree, and I suggest that it go into the record instead of the article which Senator Phelan was going to read.

The **Chairman.** Let that be the order of procedure. The stenographer will see that that is put in the record.

(The memorandum referred to above is here printed in full, as follows:)

MEMORANDUM FOR THE DIRECTOR.

In connection with the new Carranza oil-tax decree, I am quoting some of its more important paragraphs, in so far as they affect the petroleum industry, and have computed the various taxes in American money. The valuation and tax figures given in the decree are in Mexican money, and I am informed that $1 United States money is worth $1.95 Mexican money.

"All crude petroleum of national production, as well as fuel petroleum which is not destined to be used within the country, shall pay the tax in accordance with the following tariff: Fuel petroleum shall pay 10 per cent per net ton ad valorem; this value shall be considered for fuel oil of 0.91 density at $9.50 (Mexican money). The value of the ton of fuel oil shall diminish 20 cents for each increase of 0.01 of density, including in this variation the petroleum whose density may be 0.97."

Fuel oil of 0.91 specific gravity (to 24° Baumé) is thus taxed for export purposes about 7 cents a barrel.

"The value of fuel oil whose density may be less than 0.91 shall increase for each hundredth which it may diminish in density the sum of 40 cents."

Thus the tariff on oil lighter than 24° Baumé becomes higher as the Baumé gravity becomes lighter.

"The price of $7.50 (Mexican) per ton is assigned per ton to all petroleum whose density may be greater than 0.97."

Thus all petroleum, including fuel oil, is taxed 6 cents for 14° Baumé oil and a little less as the oil becomes heavier.

"Crude petroleum shall pay 10 per cent per net ton ad valorem; said value shall be considered as $14 (Mexican) for oils of 0.91 density, diminishing in the same manner that fuel oil does, up to a density of 0.97."

All crude oil of 24° Baumé is thus taxed about 10 cents a barrel and the tax diminishes as the oil becomes heavier.

"Refined gasoline, one-half of 1 cent per liter; crude gasoline, 1 cent per liter; crude kerosene, one-half of 1 per cent per liter; refined kerosene, one-quarter of 1 cent per liter; lubricant, one-quarter of 1 cent per liter."

This makes a tax of about 1 cent per gallon on refined gasoline, 2 cents per gallon on crude gasoline, 1 cent per gallon on crude kerosene, one-half cent per gallon on refined kerosene, and one-half cent per gallon on lubricants.

Senator **Norris.** It is a sort of export tax?

Mr. **Naramore.** Yes.

Senator **Phelan.** Is that considered a high percentage?

Mr. NARAMORE. Yes, sir.

The CHAIRMAN. Is there anything further from the gentleman now testifying? Are there any questions that anyone desires to ask, or is there anything you wish to add to your statement?

Mr. REQUA. I want to add one paragraph, and that is this: We are prone to think of our coal supply as limitless, and that if it ever is exhausted the hydroelectric power will supply the deficiency. We forget that the machinery must be lubricated and that there is no known substitute for petroleum as a lubricant. The problem of the source of our heat, light, and power is dependent on the problem of solving the question of lubrication.

The CHAIRMAN. We will now hear Mr. C. F. Kelly.

STATEMENT OF MR. C. F. KELLY.

Mr. KELLY. Mr. Chairman and Senators, my appearance before the committee is rather an unexpected one. I am in the city on other business. I did not know that this hearing was in progress.

The CHAIRMAN. I suggest that you state your position.

Mr. KELLY. I am vice president and manager of the Anaconda Mining & Copper Co., and I am also president of the International Smelting Co.

I desire, however, without discussing the particular features of the bill that is before the committee, to impress you, more from the standpoint of practical business operations, with the absolute necessity for some legislation which will relieve the coal situation in the West. As a matter of fact, the coal mining in the West, the development of coal mines and the opening up of new mines, has not kept pace with the tremendous increase in industrial development. The result is that not only for transportation purposes but for carrying on industries out in the West as well, the coal supply has become utterly inadequate. I can certify from my information concerning the operations with which I am directly connected, and with particular reference to the national situation at this time, demanding the utmost in the production of copper, lead, and zinc, that one of the critical things that the mining industry is confronted with is now an inadequate supply of fuel.

This, of course, is closely interlocked and interwoven with the transportation problem. The supply of fuel, perhaps, could be augmented if the carriers were in a position to furnish more cars. The coal mines might then be operated intensively; but at the same time it works back to a certain extent in a circle.

I was informed by Mr. Lewis Hill, president of the Great Northern Railroad, that during the past winter they hauled nearly 600,000 tons of coal to operate the Great Northern from Central Illinois coal fields clear out to the Rocky Mountains. I know that in our own operations we were obliged to haul coal from Milwaukee and St. Louis because of an inadequate supply in Utah and Colorado.

I know that the International plant in Utah is to-day limited in its capacity, in its output of lead, because of our inability to secure adequate coal supply from neighboring fields in Wyoming and Utah.

Senator NORRIS. How long has that been in existence?

Mr. KELLY. It has reached an acute stage during the last winter. At this time practically every industry is endeavoring to stock up with coal in order to carry it through the winter. It has been practically impossible to secure any.

In Montana, less than a month ago, I instructed our purchasing department to get into the Wyoming fields and buy all of the coal that it was possible to secure, in order to go into next winter's operations with a stock on hand. The only response that we got was from one concern in Wyoming, who told us they could possibly furnish 500 tons of slack a day at a price, I think, of $1.60 at the mines. We are purchasing slack coal and using it at current prices.

Senator NORRIS. About what are your daily requirements?

Mr. KELLY. In Montana our daily requirements will run about 3,000 tons a day; in Utah something less than 700 tons.

Senator BRADY. Do you use slack mostly?

Mr. KELLY. It depends upon the particular operation. For smelting we can use slack, because it goes through the pulverizer. For some operations, however, we prefer to have lump coal. In Utah we prefer the lump coal, because we are not provided with pulverizers.

Senator WALSH. Where are your works?

Mr. KELLY. The principal works of the Anaconda Copper Co. are at Butte and Great Falls, Mont.

Senator WALSH. From what concerns does the coal supply come?

Mr. KELLY. We have coal mines in northern Montana and other mines in southeastern Montana, and mines in the Diamond Field that are operated by the Diamond Coal & Coke Co., a subsidiary of the Anaconda Co.

Senator WALSH. That is in Wyoming?

Mr. KELLY. Yes, sir.

Senator WALSH. Do you deal in it commercially as well as mine it for your own use?

Mr. KELLY. To a limited extent. To the extent it is possible for us to do it, during the past two winters we have, at the expense of crippling operations, furnished coal to people who absolutely had to have it to keep warm.

Senator WALSH. Do you supply the railroads?

Mr. KELLY. The Oregon Short Line in Wyoming. We dispose of what we can spare to the railroads in Montana. The Northern Pacific is taken care of. They have their own coal mines. The Great Northern Co. has recently offered to take all the coal we could spare, and to send their equipment in and haul it out; but we were unable to supply them coal without taking it from our own operations.

Senator WALSH. Are you in any sense in the coal business commercially?

Mr. KELLY. Yes, sir.

Senator PHELAN. What is the remedy for the shortage?

Mr. KELLY. To adopt some legislation permitting the opening of some additional coal mines.

Senator STERLING. What is the grade or quality of Montana coal?

Mr. KELLY. The coal lands of Montana are of a poor quality. They are lignite, and will run ten and a half to eleven thousand B. t. u. The Wyoming coals are of a better quality and will run as high as 13,000.

Senator STERLING. Is there any effort to compress that lignite coal into briquettes?

Mr. KELLY. We did a great deal of experimental work in that connection and endeavored to compress, under very heavy gasoline-engine pressure, coal dust into briquettes. I do not know that that is being done in a practical way anywhere.

Senator SHAFROTH. Is not this shortage in coal due to the fact that 10 or 15 years ago they began to withdraw coal lands from entry?

Mr. KELLY. Undoubtedly.

Senator SHAFROTH. On account of the valuation placed on these lands people have not found it remunerative to open coal mines?

Mr. KELLY. I will say that the coal mining business, except in comparatively few localities, is not a particularly remunerative business.

Senator SHAFROTH. Even now?

Mr. KELLY. Even now. I think, perhaps, during the winter, with the large advance in prices generally and with the coal prices advanced, the mines have made money; but I doubt whether, during the past 10 years, any operators, except those who were particularly favorably situated, have made a dollar out of the coal business. I know, as far as our coal business is concerned, that if we charge a reasonable price for the coal delivered to ourselves, representative of the cost of extracting it and add to that an amount of money that we are able to get from commercial sales, we would not by any means be able to pay interest on the amount of money invested.

Senator SHAFROTH. Do you know whether or not any quantity of coal lands has been taken up in Montana under the acts of Congress as they are now, in the last 8 or 10 years?

Mr. KELLY. I do not know of a single coal mine developed in Montana during that time with the exception of that at Roundup on the Milwaukee Railroad. That developed because of favorable circumstances. The Milwaukee Railroad built through Montana, and its main line crossed the coal fields that had theretofore been inaccessible. It was that transportation condition which opened up the large field there.

Senator BRADY. Is there a large body of coal in that field?

Mr. KELLY. Yes, sir.

Senator SHAFROTH. Do you know what prices have been put upon the coal lands by the Government?

Mr. KELLY. Yes, sir; some of them.

Senator SHAFROTH. Tell us some of them.

Mr. KELLY. The Diamond Coal & Coke Co., the subsidiary of the Anaconda company, of which I spoke, obtained through soldiers' additional homestead scrip entries patents on some lands in Wyoming. Under the existing coal-land law it was absolutely impossible to have entered these coal lands, because they were remotely situated from the apex or the outcrop, and the possibility of their being coal lands was dependent upon whether the vein, continuously in its descent, existed so as to underlay the particular lands that were remote from the apex of the bed. These patents had been issued for some years on these homestead entries when the United States Government attacked the validity of the patents. The case was tried and the trial court sustained the entries. Upon appeal by the Government to the circuit court of appeals, the entries were canceled, and then that was sustained by the Supreme Court of the United States.

We were down close to a particular tract that was involved in the controversy. Our entries had extended to this tract. We were in a position to go in and take coal out. We made application for a patent to 240 acres of land, I think it was. We were charged $200 an acre, or $54,800 was the valuation placed on that acreage by the Government. We paid the money into the Land Office over two years ago and the entry has not been acted upon; but it is fair to say that they developed other complications, of which we were entirely ignorant and of which I did not know until I conversed with Mr. Tallman the other day.

In that case the valuation placed on the coal land was about $200 an acre. While we could afford, perhaps, to pay that price for that coal land because of the fact we had a plant established and had our entries where they extend out close to this particular land, I do not think anybody could afford to pay that for coal land of that valuation and establish a plant, do the necessary work to open the coal mine and get in shape to take the coal out of the ground, considering the uncertainties that attend operations, particularly with a coal-land law that limits the acreage that associations can get to 320 acres, while a single entry is limited to 160 acres, which is entirely inadequate to form a basis for a coal-mining operation.

Senator BRADY. How do you arrive at the valuation of $200?

Mr. KELLY. That was the valuation placed upon the land by the Government.

Senator BRADY. How did the Government find that value?

Mr. KELLY. I do not know. I really do not know upon what basis they fixed that valuation. The land is classified, in this particular instance, on the ground of its remoteness from the outcrop of the vein.

Senator BRADY. It would necessarily require an expert to appraise the land intelligently.

Mr. KELLY. Yes, sir. I have no doubt they had experts.

Senator BRADY. Those experts were appointed, doubtless, by the Government?

Mr. KELLY. Yes, sir.

Senator SHAFROTH. Are other lands in Montana valued, in your judgment, too high?

Mr. KELLY. The valuation was in Wyoming.

Senator SHAFROTH. Well, in Wyoming.

Mr. KELLY. I think, under the recent classification, coal land is valued too high?

Senator SHAFROTH. Does that prevail also in Montana?

Mr. KELLY. I am not familiar with the money classification that has been placed upon them.

Senator PHELAN. Would you prefer a royalty rather than to make an investment in the land?

Mr. KELLY. As a matter of fact, speaking from an operating standpoint, undoubtedly the operator would prefer to own his land and know in advance what his ultimate cost was to be, in order to make provision for it. A fee simple title is unquestionably more desirable than a leasehold; but as between the policy that absolutely prevents development of public land and the adoption of a leasehold, as a practical proposition I would be in favor of a leasehold.

Senator PHELAN. It would encourage development?

Mr. KELLY. Yes, sir.

Senator SHAFROTH. Do you think it would encourage the people as much as the entry system has in the past?

Mr. KELLY. I do not think there has been any question but what there would be a greater development under the entry system; yes, sir.

Senator JONES. Assuming a reasonable tenure under a lease, how much royalty could you afford to pay rather than buy the land at $200 an acre? I refer now to the particular land that you have been discussing.

Mr. KELLY. Of course, I think a good many other factors aside from a mere comparison of the monetary value would enter into the matter. The amount of money that you could afford to pay for any coal land, either under a leasehold or a fee-simple title, would depend upon a great many factors. It would depend upon its accessibility to transportation, its accessibility to market, the mining conditions, the character of the country, etc.

Senator JONES. I mean the particular land that you have referred to, where you actually paid $200 an acre. Take that particular land. How much ropalty could you have afforded to pay, as a mtter of preference, or in order to put you on an equal basis, with the payment of $200 per acre?

Mr. KELLY. That would involve a computation of the tonnage per acre, which is a speculative matter. I think you can afford to pay $200 an acre rather than a considerable royalty. However, in answering that, I do not mean to say that the royalty proposed in this bill, of 2 per cent, is high, but the fact that you have no definite tenure and that you do not know what the royalty may be upon the revision of the rates tends to discourage capital.

Senator JONES. Would you have preferred to pay $200 an acre for that land rather than to pay 2 cents a ton royalty for the coal?

Mr. KELLY. Two cents a ton?

Senator JONES. Yes.

Mr. KELLY. Two cents a ton—I do not know how that would figure out. I say frankly that I would sooner pay the entry fee than the royalty charge. How much this 2 cents would figure out, I do not know.

Senator JONES. You prefer to pay the entry fee rather than the royalty, assuming that the burden would be substantially the same?

Mr. KELLY. Yes, sir.

Senator BRADY. The ability to finance would be better?

Mr. KELLY. Undoubtedly.

Senator SHAFROTH. Is not the operator always in fear that his lease may be forfeited?

Mr. KELLY. Of course that is a question, Senator, that depends upon the individual. Personally, I have done a great deal of business with the United States Government under the permit system in connection with water power and in connection with mining. I have always had the conviction that anyone doing business with the

United States Government was fairly safe. I do not think that we can indulge in the presumption that these permits which are granted by governmental sanction are going to be arbitrarily taken away or that great injustice is going to be done.

Senator SHAFROTH. What do you think of the order of Secretary Garfield when, two days before he went out of office, he revoked 40 water-power permits?

Mr. KELLY. I thought that order was a gross exercise and abuse of power.

Senator SHAFROTH. Was not such action——

Mr. KELLY (interposing). I think, however, even in that particular case every operator had been given an opportunity to comply with the act of February 15, 1901, and only those permits were revoked where the permittee refused to avail himself of the opportunity to come in under the act.

Senator SHAFROTH. That is, refused to enter into the leasing system?

Mr. KELLY. Yes, sir.

Senator HUSTING. Do any of the coal operators in Montana and Wyoming operate mines under a royalty agreement where the owners are private parties?

Mr. KELLY. As a rule not. I know of a few instances where adjoining lands to big operations are worked by a large operator on a royalty basis.

Senator WALSH. Do you know about the leases of the Colorado Fuel & Iron Co.?

Mr. KELLY. I do not know.

Senator WALSH. Don't you know, as a matter of fact, that they operate extensively under leases?

Mr. KELLY. I know that that has been done, but referring to Montana particularly, I thought that practically all operators owned their coal fields.

Senator HUSTING. Do you know what royalties are charged by private individuals or corporations?

Mr. KELLY. In Montana it is about 10 cents.

Senator HUSTING. Two cents would be low as compared with what they pay private parties?

Mr. KELLY. Twenty per cent.

Senator HUSTING. Do you know what the market value of the land would be if you purchased it from an individual?

Mr. KELLY. I think it would depend upon the tract of land.

Senator HUSTING. Would you say that a $200 an acre charge by the Government for the coal lands that you propose to buy was a reasonable price? In other words, would you be willing to resell for $200?

Mr. KELLY. No, sir; I would not. I did not mean to say that that charge was too high. I figure it is a pretty stiff charge to pay the United States Government for any acreage of its public land. I think it is a radical departure from the whole policy and system that has prevailed in connection with the public lands. However, if you put it on the basis of the Government entering into a business transaction and trading something of value, as a regular business trade, perhaps the price is not high; but that has not been the theory that has underlain the legislation with reference to public lands.

Senator HUSTING. Don't you think from the standpoint of the public it is a good theory not to charge exorbitant prices, but to charge a price commensurate with the value of the land?

Mr. KELLY. No; I do not think so. I think all those charges are in the nature of an indirect tax. I think whatever charge you make on coal land or other public utilities, or public lands or resources taken to be developed into public utilities is merely an indirect tax, because the developer must see his way out.

Senator HUSTING. Were the Government not to fix the price of coal land, but let the operator charge whatever the traffic will bear, you would find that oftentimes the price of coal would not depend upon the value of the land, and the charge to the public is not based upon the original cost of the land.

Mr. KELLY. Every element that enters into the operation is ultimately charged to the consumer of the coal.

Senator HUSTING. You charge a price for coal according to what the market price is. That may be way above the cost of production. Then the original cost of the land does not affect the charge to the public for coal.

Mr. KELLY. Yes. That is argumentatively stated.

Senator BRADY. You paid $200 an acre for that coal land. You would have to add a certain percentage to every ton of coal in order to secure a return on the money.

Mr. KELLY. Certainly.

Senator NORRIS. Assume that that is all passed on; assume that it is proper to pass it on to the man who purchases the coal. If we take the other course now and have the Government sell the land for a nominal price, would it not be folly then, if we do take that course, to say that the Government should not have the right to say that an operator shall not sell his coal at an exorbitant price? Otherwise, what is the object of the Government in going into it on anything but a business basis, if it is not going to see that the consumer gets the benefit of it?

Mr. KELLY. I think that, of course, opens up a very broad question, and one, perhaps that I should not care to go into unless it is your desire.

Senator NORRIS. Yes; that is true.

Senator WALSH. Will you let me make a statement? Dr. Wilbur, the president of Leland Stanford University, is here to testify, and is desirous of returning to his work. I trust that these discussions of policy will be as brief as possible.

Senator SHAFROTH. That is the very question, however, that we are going to determine, as to whether or not we shall have the leasing system.

Mr. KELLY. Well, very briefly, I do not think it is a proper governmental function to undertake the management and control of all private business, and I feel that if you control the sources of competition and prevent unlawful combinations, the market price will adjust itself to a proper level. If you can not believe that, our whole theory of economics is wrong. I do not believe it is the function of the Government to step in and say, "You shall charge so much for coal."

Senator NORRIS. Suppose the Government had given it to you, or sold it to you at a low price, would you have sold your coal to the next man cheaper?

Mr. **Kelly.** As a matter of fact, speaking personally, we have adopted a policy, because it is in line with our general policy of making our wage scale go as far as it will, of trying to control the coal market to the extent of keeping the price of coal down to the community where we do business. We can do that to the extent that our supply of coal is a regulatory factor in the community, and we have been selling coal at a price less than other people.

Senator **Norris.** Speaking generally, would not the man who bought that land sell the coal out to the dealer or to the consumer, as the case might be, and get all he could for it?

Mr. **Kelly.** As a general rule; yes, sir.

Senator **Norris.** If he could buy from the Government, at 10 cents an acre, he would sell it at as high a price as though he paid $200 providing that the difference in the cost was not so great that he could not compete with his competitors?

Mr. **Kelly.** I think that is true.

Senator **Walsh.** But his competitor would be buying at the same rate of 10 cents.

Senator **Norris.** You might be at a particular location, where you could get coal at a cheaper rate than your competitor. You would sell the coal in the neighborhood of what your competitor charged.

Mr. **Kelly.** Yes. Favorable location in business is one of the elements of advantage, of course.

Senator **Shafroth.** Does not the fact of putting high prices upon coal lands have a tendency to prevent development, thereby lightening the production and increasing the price of coal?

Mr. **Kelly.** I think it does.

Senator **Jones.** How much land should a company be permitted to buy in order to be assured of its production and of its return on its investment in a plant of that sort? How much acreage would it be advisable to let one concern have?

Mr. **Kelly.** I see the reason for limiting the acreage at some point, as a matter of governmental policy. As a matter of economic mining there should be no limit. I think the acreage provided in this bill is 2,560. I think that would make a basis of a very fair operation. I think if it was much less than that it would not; if it was much greater it would take another plant.

The **Chairman.** Do you think that the man who is allowed 160 acres is not adequately supplied?

Mr. **Kelly.** Yes, sir; that is entirely inadequate.

Senator **Jones.** Two thousand five hundred and sixty acres, at $200 an acre, would amount to how much of an investment?

Mr. **Kelly.** I have not the figures. I have not figured it out.

Senator **Shafroth.** I want to ask you this question: What do you think of the development that would take place if the Government should offer these lands for sale at competitive bidding, with a limitation of 2,560 acres for each person, corporation, or association, providing that no combination should take place; in other words, a direct sale at a competitive bid, with the understanding that the Government would not set the price arbitrarily, but would leave it to competition; do you think that would be successful or not?

Mr. **Kelly.** I think it would be successful. It might not be altogether fair, because in that case a man who is poor would be practically excluded from entering the business. That has not been the policy of legislation in the past.

Senator **Shafroth**. There has been a price of $20 an acre, but there has been a storm of protest about the Government getting an adequate price for the land. As you know, one of the great objections throughout the country to the policy is the fact that these lands are not subject to taxation for school, county, and State purposes. There is a certain amount of duty to the States which we think ought to be taken into consideration in connection with the National Government.

Mr. **Kelly**. Yes, sir; I see your point very clearly.

Senator **Jones**. What would be the annual production of a going plant?

Mr. **Kelly**. A good sized coal plant?

Senator **Jones**. Such as you would develop on 2,560 acres.

Mr. **Kelly**. The minimum production ought to be 1,000 tons a day.

Senator **Jones**. And that would be——

Mr. **Kelly**. Three hundred thousand tons a year.

Senator **Jones**. Well, now, you have an investment in the coal lands of $512,000.

Mr. **Kelly**. Yes, sir.

Senator **Jones**. How much would you have to increase the price of coal in order to take care of the interest on that investment?

Mr. **Kelly**. You would not only have to take care of the interest on the investment, but amortize the principal in the mining operations. You would have to allow 6 per cent for the actual money, and then write off the principal invested against the tonnage in the land.

Senator **Norris**. Because eventually you would exhaust it?

Mr. **Kelly**. Yes.

Senator **Husting**. How much would it cost to operate per ton of coal?

Mr. **Kelly**. Where?

Senator **Husting**. On a proposition such as was mentioned, producing a thousand tons a day.

Mr. **Kelly**. That would depend upon the number of tons in the year. In other words, you divide the $512,000 by the number of tons you get.

Senator **Husting**. How much do you figure on amortizing the plant and the interest on the investment? How much would you figure the cost to mine a ton f. o. b. cars at the mine?

Mr. **Kelly**. Including this charge?

Senator **Husting**. Altogether.

Mr. **Kelly**. I think it varies very much in different fields, so that you can not state any rule for it. It costs anywhere from $1.25 to as high as $2 a ton to mine coal, dependent upon the character of the vein and the difficulties that you encounter.

Senator **Husting**. What do you get for coal?

Mr. **Kelly**. We get from—well, we are getting pretty good prices now. The ordinary mine-run coal in our section will bring, in quantities, $1.50 a ton to $1.75 a ton. That is for mine run, and for lump it will reach $2.25.

Senator **Sterling**. That is lignite coal?

Mr. KELLY. Yes, sir.

Senator WALSH. At the mine?

Mr. KELLY. Yes, sir.

Senator STERLING. What is the character of Wyoming coal?

Mr. KELLY. It is in Diamondville and Rocky Springs that we get a better quality. It is a soft coal, but it is a better quality than the Montana coal. It is of the same general character, though.

Senator STERLING. It would be called lignite coal?

Mr. KELLY. I think so.

Senator WALSH. Can you tell us what advance there has been in the price of domestic coal in Montana for the last year or so?

Mr. KELLY. I think the retail price has advanced from $6 to $8 and $8.50 a ton. The transportation charge is a very considerable item. The coal has to be hauled a long distance. I think the freight rate from Butte into the Wyoming field is $2.85 a ton; from the eastern Montana field, I suppose, about $2 a ton; so that with $2 to start at the mine, a $2 freight charge and the handling, teaming, etc., the coal can not be handled at less than from $6 to $8 a ton. They use coal 8 or 10 months in the year.

Senator SHAFROTH. Mr. Kelly, concerning the question of having title to the land, or under a leasing system, would a man who had to borrow money for equipment, development, mining machinery, and things of that kind, not be able to get a better deal from a fee simple title than from a leasehold title, and consequently, would not a poor man or a man of limited means have a better chance of borrowing money for developing under a fee simple title than under a leasehold title?

Mr. KELLY. I have not any doubt, Senator, if you want to finance a coal proposition, if you want to issue bonds against it or borrow money on it, that you could do very much better if you had a certainty of title than if you did not. No one is going to loan money on anything so indefinite.

Senator SHAFROTH. And subject to forfeiture?

Senator PHELAN. The State may tax the output of a mine?

Mr. KELLY. The State does tax the output of a mine, of mines generally, coal mines and other mines.

Senator PHELAN. Even where operated under the present system.

Senator SHAFROTH. Under the present system no leaseholds exist or are authorized by the Government.

Senator PHELAN. The mine operated under leasehold also would be taxed, would it not?

Mr. KELLY. I assume it would. If you should pass a law that permitted the operation of a mine under a lease, I do not know that that would affect the State law of taxation which would provide for a tax on the net proceeds.

Senator SHAFROTH. It depends entirely on whether the Government holds the title.

Senator WALSH. You are a lawyer, Mr. Kelly, are you not?

Mr. KELLY. Yes, sir.

Senator WALSH. You have practiced law for 15 years in Montana?

Mr. KELLY. Yes, sir.

Senator WALSH. Do you feel that there would be any difficulty about the State taxing the net output of the mine operated upon Government land under a lease?

Mr. KELLY. I never considered the question; do not know that it as ever arisen. I can see no difficulty in doing so.

Senator SHAFROTH. It would not as to minerals, because the aw——

Mr. KELLY. My judgment would be it would be subject to the State aw on taxation. I see no reason why it should not.

Senator HUSTING. It is a fact, coming back to the question of the lifficulty of financing a leasing proposition, that a large percentage f the coal operators in the country to-day are operating under a easehold instead of under a fee, is it not?

Mr. KELLY. I think that is quite generally true.

Senator HUSTING. Do you think it would make any particular dif- erence whether they got more favorable terms from the Govern- nent at a lesser royalty, as you stated a little while ago, that it would e any more difficult to finance a leasehold from the Government han a leasehold from a private individual?

Mr. KELLY. Yes; unless the leasehold was very definitely fixed. If ou and I enter into a leasing agreement, we draw the terms of the ontract; we make it in such a way there is not going to be any for- eitude except for very definite causes between you and me. But in a ease, particularly with an indeterminable period, I think you would ave considerable difficulty to finance it.

Senator HUSTING. Do you not think private individuals drive a arder bargain than the Government does?

Mr. KELLY. My experience has been the other way.

Senator BRADY. If they do, at least they make a definite bargain, lo they not?

Mr. KELLY. Yes.

Senator JONES. Just a word about the 160 acres allowed now under his bill. Of course, an association, corporation, or a concern—a go- ng concern with experienced men at the head of it—would have no rouble financing either under a lease or by purchasing the land. ut do you not believe it is possible for a man who is starting to de- elop a coal mine, even though he may have had a reasonable amount f experience, to go and secure an issue, or the sale of an issue, of a ond for the purpose of developing that mine on a lease?

Mr. KELLY. You say, is it possible?

Senator JONES. Is it possible, from your experience?

Mr. KELLY. Possible, but I think it would be rather hard, gen- rally. I would not want to undertake it.

Senator JONES. But do you think you could do it with your con- ern?

Mr. KELLY. Yes; a large concern could do it, but to finance it ould be difficult.

Senator JONES. Now, if you were to buy a tract of coal land as a asis of starting the production of coal for the general market, do ou think that 10 per cent annually on your original investment as gross sum would be excessive in order to provide for interest, taxes, nd amortization?

Mr. KELLY. I think that would be inadequate.

Senator JONES. You think it would be inadequate?

Mr. KELLY. Yes, sir.

Senator JONES. What do you think would be adequate?

Mr. **Kelly**. Well, on plants and structures generally that go into an operation of this kind I should think that 15 per cent would be a minimum to allow for interest, depreciation, and amortization, and in addition to that, in a mining operation, such as a coal mine, where the content of the ground can be quite definitely ascertained——

Senator **Jones**. Aside from your plant and you depreciation, just the coal land itself, your investment in the coal land and the necessity for providing for amortization, do you think that 10 per cent would be excessive?

Mr. **Kelly**. No; I should not think so. I think that would be very conservative.

Senator **Jones**. You think it would be rather low than otherwise?

Mr. **Kelly**. I do; yes, sir.

Senator **Jones**. Now, then, on the basis of land up to $200 an acre, you would have an investment of $512,000 in the land itself?

Mr. **Kelly**. Yes, sir.

Senator **Jones**. Ten per cent of that would be $51,200 a year that you would have to get out of your coal sale in order to provide for the interest on the inventment and amortization?

Mr. **Kelly**. Yes, sir.

Senator **Jones**. You mine 300,000 tons a year, and in order to take care of those things, or, in other words, the $250,000 a year, that would be 17 cents a ton, would it not, and a fraction, in addition that you would have to add to each ton of your coal in order to take care of the interest on the investment and to amortize the purchase price?

Mr. **Kelly**. Yes; on the basis of your figuring, that would be 17 cents; but I do not think that would be enough.

Senator **Jones**. You do not think that would be enough?

Mr. **Kelly**. No, sir.

Senator **Jones**. You think it would be at least 20 or 25 cents?

Mr. **Kelly**. And you are including taxes?

Senator **Jones**. Taxes, interest on investment, and the amortization.

Mr. **Kelly**. I should say 15 per cent, at least.

Senator **Jones**. Then, it would just add 50 per cent to the figures which I have got here?

Mr. **Kelly**. Yes; make it 25 cents.

Senator **Jones**. Make it 25 cents per ton. Then, if you were to lease this land from the Government at a royalty less than 25 cents a ton you would be making money on that sort of deal rather than to buy the land at $200 an acre, would you not?

Mr. **Kelly**. Yes, sir.

Senator **Shafroth**. Yet you would prefer to have a purchase proposition rather than leasing proposition, would you not?

Mr. **Kelly**. As a general proposition, I should.

Senator **Jones**. Now, Mr. Kelly, if on the purchase basis you would have to add to your coal not less than 25 cents a ton, how much less royalty would you prefer to pay than to have to get out of the coal itself this 25 cents a ton, in order to pay interest on your investment, or, in other words, how much of a margin would you like to have between the uncertainty of a governmental lease and the actual ownership of the property itself? How much per ton do you think would pay for that risk of the tenure of the Government lease?

Mr. Kelly. I do not know that that is reducible, in my mind, exact money figures. I would say that it is so much preferable own your land in fee simple, to be able to finance on the basis of c tainty and ownership, that it is worth quite a little sum of mon If the cost that you had to pay for that would be prohibitive, if, against 50 cents, for instance, in one case and 2 cents in the oth you might prefer to pay the 2 cents; I might prefer as an operat to pay the 2 cents, but if I had to go and borrow money from oth people to assist me in financing my operation and carrying it throug I might find it impossible to do it.

Senator Phelan. You expressed confidence in the Government the United States in dealing with the grantees?

Mr. Kelly. Yes; but I have had awfully hard work to get ban ers to feel the same confidence that I have.

Senator Phelan. You mentioned a case where Secretary Garfie made revocation of some permits?

Senator Shafroth. I did.

Senator Phelan. I should like to know, as a matter of inform tion, if any money had been expended by the permittees on the locations?

Mr. Kelly. Very large sums in some cases.

Senator Phelan. And the Government changed the terms of t contract and, because the permittees would not accept the new term the permits were revoked?

Mr. Kelly. I think that is it.

Senator Phelan. Was there no action in Congress to correct tha was there any relief asked for by the permittees?

Senator Walsh. Mr. Chairman, I think we ought to not allo that to stand that way. The original permits were granted with th power reserved to the department to revoke any time they saw f to do so.

Mr. Kelly. Yes.

Senator Walsh. Those are the terms under which they were take The department said that unless you pay a certain amount of roy alty, and if not we will revoke the permit; and, as Mr. Kelly sai some of the companies refused to pay and the permits were there upon revoked.

Senator Phelan. Those permittees who had expended large sum of money, they preferred to give up their rights rather than to pay

Senator Walsh. No; but they have contended up to the presen time that the order of revocation was void, and they have bee fighting that proposition until it was determined the other day tha the order was valid.

Senator Phelan. It is a revocation of the permit, then?

Senator Walsh. Exactly.

Senator Jones. How much money is necessary to raise in order t establish a mine which will turn out 300,000 tons of coal per annum?

Mr. Kelly. Well, I do not know that I could give you that figure. Senator. I should say, going into a venture of that kind to establish a plant, open up your mine, and get in shape to produce the coal would take upward of half a million dollars.

Senator Jones. Then on this venture you would have to have about half a million dollars invested in plant and another half million dollars in land, in round numbers?

Mr. KELLY. Yes, sir.

Senator JONES. Do you think if you had to raise the money with which to buy the land and then put up the plant that you would have any greater difficulty in doing that where you could produce your coal at an actual cost for the coal itself of 10 cents a ton than where you would be required to dispose of your coal on the basis of allowing 25 cents a ton? Do you not think the men who furnish the money, if they were assured that you could get your coal upon a royalty basis where you would only have to pay a royalty of 10 cents a ton, that they would furnish the money on that plan in preference to a proposition where you would have to get out of the coal produced 25 cents a ton?

Mr. KELLY. I should think, as a matter of principle, no. There are the following reasons, however: First, in order to raise that money you have to mortgage your property and to issue bonds, and the security is your title. Now, according to the provisions of this bill—while I did not intend to enter into a discussion or argument of it and have given it only a very cursory examination—the first objection is you have no definite tenure of title. If I go to a banker and ask of him to take a mortgage on my property, he wants something he can foreclose in the event of my default, in the event of my failure to pay. Here is an indefinite title, terminable at an uncertain date.

Senator JONES No; it is terminable only upon the default, is it not? Is that not the general provision of the bill, that they should be terminable only upon default?

Mr. KELLY. I know that raises the question as to what constitutes a default. Our people, our bankers, our bond people have not been educated to regard the so-called indeterminate lease as a safe title. In the course of years, when this becomes established, 15, 20, or 40 years from now, when the attitude of the Government with reference to indeterminate titles is established and clearly recognized, there may be a different feeling about it. But you are taking the proposition to men accustomed to lending money on a definite title, and they do not like this sort of thing.

Senator WALSH. Suppose it called for a definite period?

Mr. KELLY. If 50 years or 30 years I think it would be better.

Senator WALSH. What do you say to 25 years?

Mr. KELLY. Or 25 years. I think a definite title, even though terminable, so far as the financial feature is concerned, is better. Then, of course, you have a disadvantage in that you must amortize within a definite period, requiring you to charge higher rates for power and for coal. And the further proposition that your curve line of returns is always a slowly ascending one; after the beginning period it goes along horizontally and with the definite ending of your title to the property it is inevitable, in my judgment, that toward the end of the period the property will not be kept up, and there will be waste.

Senator NORRIS. It will cost less, will it not, to open up this mine under a royalty basis than if you had to pay $200 an acre for the land? You would not have quite so much money invested; you would not have to borrow quite as much money?

Mr. KELLY. That is true.

Senator SHAFROTH. I want to ask you one more question. Is it not a fact that what is feared in governmental leasing is that these forfeitures will be imposed because the officers who enforce the forfeiture will feel that they will be criticized if they waive anything?

Mr. KELLY. I would not have that feeling, Senator, about it. I can only answer for myself. I would not have any feeling of that kind.

The CHAIRMAN. Is there anything else, Mr. Kelly, that you want to say?

Mr. KELLY. No, sir. I thank you very much, Mr. Chairman.

The CHAIRMAN. The committee is much obliged to you. I shall have to ask Senator Phelan to take the chair while I am absent.

The ACTING CHAIRMAN (Senator Phelan). Dr. Wilbur will now address the committee.

STATEMENT OF DR. LYMAN WILBUR, PRESIDENT OF STANFORD UNIVERSITY, CALIFORNIA.

The ACTING CHAIRMAN. Doctor, you may state your position on this matter—what your interest is.

Senator WALSH. Also please give your title and present occupation.

Dr. WILBUR. I am president of Stanford University, in California.

Senator WALSH. What is the business which calls you to Washington at this time?

Dr. WILBUR. I am here working with Mr. Hoover at the present time.

The ACTING CHAIRMAN. As a volunteer?

Dr. WILBUR. As a volunteer; yes, sir.

Senator WALSH. Have you had occasion to make any inquiries into the production and consumption of oil on the Pacific coast and the stocks on hand?

Dr. WILBUR. Yes, sir; I have had considerable occasion to do that because I was appointed by the governor on the State council of defense and put upon the research committee of that council, and we at once started on the problem as to how best to conserve the use of the oil, and I was very much shocked to get a statement to the effect that we were consuming some 40,000 barrels of oil in California each day more than we actually produced, and that our stock was something like 40,000,000 barrels of oil. It was quite clear to me at once if that was true we were riding to a fall as far as the fuel situation was concerned, so I took this matter up with the geological department of the university and asked them for a private report on the exact situation. The mining department there came back with a report to me that the facts that I had received were essentially correct. I asked them, "Is it possible to increase the production of this oil?" The answer was, "The only possible immediate increase is by the development of well-proven oil territory in the State," and in the answer as to what that oil territory was, they said that it was in one of the naval reserves—Naval Reserve No. 2—so far as I know. I then followed the thing up as well as I could, getting information from friends and associates, and the conclusion I reached in the matter is that while the ultimate necessities will compel California to use hydroelectric power and probably powdered coal in order to take care of her fuel situation, that the immediate necessities require a larger production of oil in the State, that otherwise at the end of a year we shall be in a very serious predicament.

Senator WALSH. Have you available the facts concerning production and consumption within recent years in California?

Dr. WILBUR. I can not go into detail; I am not an expert in this matter, but the stocks on hand April 30, 1916, were 53,500,000 barrels. On April 30, 1917, they were approximately 40,000,000 barrels, so there had been a decrease in stocks of 13,500,000 barrels, and I understand now that stocks amount to about 39,000,000 barrels, so that we are going backward right along on these stocks.

Senator WALSH. Can you tell us whether the production has fallen off or whether it is, by reason of the consumption, being increased?

Dr. WILBUR. I have been informed that there is a slight increase in production, but it has remained practically the same, but there has been a steady increase in consumption in the State of California. We have been rather reckless, there is no doubt, in the use of our oil as a fuel.

Senator WALSH. What adjacent territory do you supply?

Dr. WILBUR. I think a considerable amount has been sent to Alaska—about a million barrels of oil.

Senator WALSH. And how far east does your supply go?

Dr. WILBUR. I think only as far as it is used upon the Southern Pacific Railroad; that we have a rather limited field to supply.

Senator WALSH. To what extent are the industries in California dependent upon oil?

Dr. WILBUR. They are almost absolutely dependent on it, because our coal is unsatisfactory and our hydroelectric power is undeveloped, so our irrigation projects, our pumping projects, and that sort of thing, and our supply of food and industries generally, including railroads, run on oil.

Senator WALSH. What is the particular consumption which has thus increased and developed the demand?

Dr. WILBUR. I think it is the use by the railroads of fuel oil; I think that is the largest consuming agency.

Senator WALSH. But that is not recent, Doctor?

Dr. WILBUR. It is comparatively recent. I think it has only been something like 14 or 15 years, as I remember, when they first started to use oil.

Senator WALSH. But you called our attention to the fact that within the last year the stock has been going down, so I take it there must have been some extraordinary consumption within the past year.

Dr. WILBUR. There has been the steady growth of industry in the State of California, and these industries have grown up around the use of oil as a fuel.

Senator PITTMAN. Has it come to your notice that the various manufacturing plants had been substituting oil burners for coal heat?

Dr. WILBUR. That has been the general rule in the State of California, to use oil and not the coal. It has been very difficult to get the coal. The Australian supply has been pretty well cut off by shortage of tonnage, due to the exigencies of this war, and there has not been an opportunity to transport coal in from Wyoming and other fields because of shortage of railroad cars, so we have practically been forced to this position.

Senator PITTMAN. I call that to your attention for this reason, that I know of my personal knowledge that in the mining industry in our State we have to discard the coal burners nearly entirely for oil burners in the last year or two because of the difficulty of obtaining coal and the economy in the use of oil. I simply state that as one reason, possibly, for the increased demand.

Dr. WILBUR. That has been rather universal. I say the industries of the State have become more and more dependent on the use of oil.

Senator PITTMAN. This is in Nevada.

Senator BRADY. The industries generally—do they attempt to get close to the oil fields?

Dr. WILBUR. It is not so important to get close to the oil fields as to get near transportation by water, because of the pipe lines.

Senator BRADY. The oil is carried to the different plants by pipe lines?

Dr. WILBUR. Yes, sir.

The ACTING CHAIRMAN. Do you know that the steamers running into the ports of the Pacific coast burn domestic oil?

Dr. WILBUR. I do not.

Senator HUSTING. Is there any appreciable quantity of oil used on the roads of California?

Dr. WILBUR. Do you mean oiling the roads?

Senator HUSTING. Yes.

Dr. WILBUR. Yes; a considerable amount.

Senator HUSTING. Have you any idea of the amount?

Dr. WILBUR. No, sir.

Senator HUSTING. And some of the railroads oil their rights of way?

Dr. WILBUR. Yes.

Senator NORRIS. In the use of oil for road purposes or burning, is any considerable quantity of it used in its crude state?

Dr. WILBUR. I only know that from hearsay; but I know there has been an effort made by those who are interested in this thing from a scientific standpoint to try to see that oil is not used.

Senator NORRIS. I supposed you had given it some attention from your position on this committee or board. That would be one line.

Dr. WILBUR. Yes; that is the thing we started in to try to correct; that was just that one point, and I think, as Mr. Requa stated a few moments ago, that the Standard Oil has used its crude oil in the best way and some of the others have not.

Senator NORRIS. Would it not be well worth the attention of anyone interested in the conservation of the oil resources to ascertain whether there is a large quantity of that kind, and if we find there is we ought to provide some method by which we could prevent this.

Dr. WILBUR. We have a special committee of the Research Council working on that very point, and it was that attack on this question that interested me in the question in the first place. They are making a sudy now to find out just how much is wasted in that way.

Senator BRADY. One of the purposes of your committee is to prevent waste?

Dr. WILBUR. The research committee—to make the most economical use of oil.

Senator BRADY. Can you give us any information as to the territory, the amount of territory that will produce oil in California?

Dr. Wilbur. I could only speak in very indefinite terms, and that naterial which I could present would be from the Bureau of Mines, nd I think it would be much better to get it from them.

Senator Brady. Could you give us any information as to the mount of oil that is being produced at the present time?

Dr. Wilbur. I think the production is something like 260,000 barrels a day and the consumption about 300,000 barrels a day.

Senator Brady. That is at the present moment?

Dr. Wilbur. At the present time; yes.

Senator Brady. Has the production increased or decreased within he last two years?

Dr. Wilbur. I should say there had been a slight increase, but not n increase sufficient to keep pace with the use.

Senator Brady. Have you any information relative to the withdrawal of certain lands by the Navy Department for naval purposes, reserving the oil for naval purposes?

Dr. Wilbur. Yes; I know something of that. I have discussed it with various people.

Senator Brady. Can you tell the committee about how large a territory that covers; how much they have withdrawn?

Dr. Wilbur. No; I could only give indefinite figures there, but I know there is in Reserve No. 2 a considerable amount of well-proven territory that is in dispute.

Senator Brady. That is information that I think the committee should have, Mr. Chairman.

The Acting Chairman. That information will be found in the hearings of last year.

Senator Brady. I am a new member of the committee, but I think that is very important information.

The Acting Chairman. Senator Brady did not hear the testimony last year. Later we will put somebody on who has that information.

Dr. Wilbur. I did not feel it incumbent on myself to get those particular figures, knowing you had that available here.

The point of view in California is that we have within the State a well-proven oil territory in which we can sink wells, and that we can not adjust our present methods of industry, so far as fuel is concerned, within two years; that we have thrown about us at the present time the burdens of war, and that we ought in some way or other be able to get at the oil in that territory and to use it.

Senator Brady. As one member of the committee and of the Senate I certainly agree with you. The matter we had to decide was how to get at it, and that, as I understand, Mr. Chairman, is what we are holding these meetings for. It seems to me absolutely necessary that the State of California be permitted to handle one of her natural resources that could be used very beneficially in this emergency.

Dr. Wilbur. That is the problem of the ordinary citizen of the State who is not interested particularly in the contest, but is interested in the State. He says if this goes on within the year there is going to be some kind of a disturbance.

Senator Norris. On that point, now, and for the purpose of my question I will assume what is a disputed question, I will admit; but assuming, for the purpose of the question, that the Federal Government has rightfully withdrawn and legally withdrawn and owns a large quantity of oil land in the so-called naval reserve that it wants to use for the Navy. Do you think if it is ascertained that that is necessary for the Navy that it ought to be given up by the Navy in order to permit California to go on with this development of her resources. As between the Navy and the industries that are going to be affected, what would you say?

Dr. WILBUR. We assume that the Navy would not use that oil at the present time. It would be held in reserve for some future emergency.

Senator NORRIS. Assuming that too.

Dr. WILBUR. We feel that the emergency exists right now and that the National Government should come to the assistance of California in this matter in the same way the State of California would come to the assistance of the National Government if the situation were reversed. We are not particularly interested in the exact ownership of the oil, but very much interested in getting it out so our industries may go on during this period while we are making necessary readjustments.

Senator HUSTING. Right there let me ask you this question. It was stated here a while ago that if the consumption increases in the future in proportion to the increased consumption of oil in the past ten years that the visible supply will be exhausted in fifteen years. Now, we are turning the Navy into an oil-burning navy. Do you not think it is necessary for the interests of the Government to maintain an ample supply of oil in the ground so the Government will not be deprived of the use of it and render the Navy useless, say in fifteen years from now?

Dr. WILBUR. I think that everything in this world is relative, and it seems to me that we are in the biggest emergency that we have ever been in right now, that it would be much better to take care of our existing emergencies rather than to provide for 10 or 15 years later, when we may be running ships on an entirely different basis.

Senator HUSTING. There is no difficulty in taking care of the emergency now, is there?

Dr. WILBUR. I do not see how we can in California unless we have increased oil under our boilers and for our industries.

Senator HUSTING. You say you have 39,000,000 barrels in stock now?

Dr. WILBUR. Yes, sir.

Senator HUSTING. And from the figures that you gave I took it that the annual stock is decreasing at the rate of one or two million barrels a year.

Lieut. Commander RICHARDSON. Per month.

Dr. WILBUR. Now, it is going down at the rate of about 40,000 barrels a day, at the present time.

Senator HUSTING. That would be about 1,000,000 barrels a month, that would be 12,000,000 barrels a year.

Dr. WILBUR. Something of that kind.

Senator HUSTING. So that you still have ample in sight, so far as the stock on hand is concerned, to run this country at least three years?

Dr. WILBUR. The stocks on hand now are considered rather small for the emergencies of the situation, with the transportation facilities more or less strained, you must carry stocks in some of these points, because if your oil supply at any one point breaks down that upsets the whole system, so you have to have some sort of thrift about this and some kind of stocks; and you have to remember that large amounts of these stocks are only recoverable with difficulty, because the oil is inside of tanks and inside of pipe lines and you can not drain the pipes and tanks absolutely, so some considerable amount would have to be deducted for those elements.

Senator HUSTING. Have you any data, or can you cite to the committee to any reports showing the consumption of oil in, say, the last 10 years in California and elsewhere, and also the uses to which the oil is being put?

Dr. WILBUR. I think that our reports from the Bureau of Mines cover most of those points.

The ACTING CHAIRMAN. Is that all, Doctor?

Dr. WILBUR. I might state that the suggestion has been made that perhaps we can get this oil from the Mexican oil fields. I took that matter up with Mr. Dohenia, and he states that it is absolutely impossible on account of the transportation, and we shall have to depend on our own fields for our own problems.

Senator NORRIS. If this theory is right, does it not follow that the Federal Government must surrender its naval reserve oil field entirely?

Dr. WILBUR. This does not concern naval reserve No. 1.

Senator NORRIS. That would be the next thing, would it not? Would that not follow in the course of time?

Dr. WILBUR. My idea was that what ought to be done was to take care of this present emergency and in the meantime stimulate a readjustment of the whole fuel situation on the Pacific coast so that if the use of powdered coal was substituted for fuel oil, and that arrangements were made, perhaps through this leasing bill, or some other way, so that hydroelectric power, which can be obtained very readily in the Sierra Nevada Mountains, could be produced in sufficient quantity to relieve the strain there. I have the same feeling that Mr. Requa has that we want to get from our deposits the lubricants to be obtained; that they are much more important in the distant future than any other.

Senator NORRIS. Even though we succeeded in avoiding the emergency in California, if it is a sufficient reason to open up the storage that the Federal Government has for its Navy to relieve the situation in California, would we not be called upon later to open up the storage to relieve some other locality, or if the California business developed so that it would demand a larger amount of oil, would we not have to give relief again from the storage of the naval oil, and if we follow that out, just take the logical course now, if that is right to do that, would it not follow that we might just as well at the beginning have the Government surrender its naval oil reserves entirely because they would eventually be taken up in that way if we must surrender them in order to relieve any difficulty that might arise in any locality where they are using oil?

Dr. WILBUR. My point of view on that was that we are now fighting a war with Germany which will be, we hope, limited to a comparatively short time, and that it is the added strain and unusual conditions associated with that war that needs this additional help at the present time, and that that period has to be covered, and I think the lesson is pretty clear to everyone in California now that they must get hold of some other form of fuel than this oil, and that the oil has been used altogether too freely.

Senator **Brady**. And if the citizens find it necessary to do that will it not be better for the Navy, instead of changing over to oil burners on their ships for a few years, to develop some coal burners and be prepared to go on and use the coal for heating and save this oil for lubricating purposes?

Senator **Norris**. Senator Brady, before you give judgment on that point, you ought to hear some of these naval men. The next war may be with Great Britain, and if Great Britain has oil burners, or any other nation we are at war with, and we have coal burners, the testimony is undisputed that we are going to be at a terrible disadvantage. We can not compete, everything being equal, against a Navy using oil against coal.

Senator **Brady**. There has never been an oil field developed yet that has not exhausted itself in a reasonable time, and if we build up oil-burning ships and the oil supply is gone we shall have to not only burn coal, but we shall have to take our ships and place them on the dock so as to prepare them for coal.

Senator **Norris**. But you do not want to be burning coal so long as another great nation is burning oil, and we ought to take steps so to conserve our oil as to be in a position that we can meet oil with oil if the worst comes to the worst.

Dr. **Wilbur**. I might say that I believe thoroughly in conservation; it is simply a matter of emergency here; a matter of giving the industries of California a chance to readjust themselves to changed conditions. As a matter of fact I understand on that naval reserve No. 2 there are a number of oil wells constantly at work draining the fields anyhow.

Senator **Norris**. Yes; I suppose that is true. There are a good many disputed titles in it.

Senator **Brady**. There is one point I desire to cover. On this reserve you speak of, which one is that?

Dr. **Wilbur**. Reserve No. 2.

Senator **Brady**. Has there not been a very, very large amount of money expended in proving those oil fields and in developing the oil fields up to their present standard?

Dr. **Wilbur**. As I understand it there is a considerable amount of oil constantly being pumped in through that field.

Senator **Brady**. Over which the Government has no control?

Dr. **Wilbur**. That is the way I understand it.

Senator **Brady**. It is my understanding, and I wish some one to correct me if I am wrong, that on this reserve No. 2 there has been a large amount of private capital expended and development work done in proving the field and getting it up to its present state of efficiency.

The **Acting Chairman**. There was private capital provided in the field originally. The Government never sank an oil well; never made any developments.

Senator **Husting**. I want to say to the Senator right there, however, that this Government expenditure was expended until the order of President Taft set it aside. That involves this whole controversy on the California oil field.

I just want to ask the doctor if, such being the case, oil being drained from No. 1, or if in part that is true, if we are going to maintain an oil Navy, is not that all the more reason we should conserve the oil for the Navy on No. 2?

Senator BRADY. Permit me right there to ask the Senator from Wisconsin a question. If that be true, why should we let the private concerns, private corporations that are now pumping the oil, get the benefit of our holding this in reserve?

Senator HUSTING. I will say I do not approve that myself, but the difficulty has been in getting it stopped.

Senator BRADY. Yes; and it can not be stopped.

Senator HUSTING. That is the question.

Dr. WILBUR. I understand there is actual ownership of certain parts of that oil field inside the reserve lines and that is a constant drain on this particular field.

Senator BRADY. It can not drain the field. I think the preponderance of the testimony shows it can not drain the field. It can drain only to a certain distance.

Senator PITTMAN. How will this relieve the situation? In 1914 Congress passed a law in view of the very conditions that exist out in a great many of these contested cases, provided that in the event of an application for patent, where the patent application is protested by the Government, that the applicant may be granted a lease pending the determination of the patent proceeding. Would that relieve the situation if those claims in contest were worked under the lease?

Dr. WILBUR. I think that would relieve the situation. We know there is great difficulty in getting casings, and we can see within a year we are going to be in great difficulty if a well has to be drilled several months before it can produce, and consequently whatever is done would have to be done very soon, and under any leasing or royalty arrangement, whatever is satisfactory in that regard would be satisfactory to the ordinary citizen of California who wants to see these industries going on until they have time to readjust themselves.

Senator PITTMAN. You understand at the present time the claims that have wells on them, that are in contest by the United States Government, are being operated through those existing wells by a receiver of the court?

Dr. WILBUR. I understood so.

Senator PITTMAN. But the production is not enlarged, because the reserve is not sinking any additional wells to tap the oil. In other words, the production has remained stationary since the reserve took charge of it.

Dr. WILBUR. Yes; that is the way I understand it.

Senator PITTMAN. And the whole situation could be almost immediately relieved by the Department of the Interior following the instructions of the act of 1914 to the effect that he shall issue leases pending the determination of a contest.

Senator BRADY. Who would receive the lease money if the patentee won his case and had a perfect title?

Senator PITTMAN. The lease money goes to the Government whether the patentee wins his suit or not.

Lieut. Commander RICHARDSON. No, sir.

Senator PITTMAN. Nevertheless that is the statute, as I remember it.

Lieut. Commander RICHARDSON. I think you are wrong.

Senator PITTMAN. I think not. I drew the act. I do not know whether I remember it or not. My recollection of the act is it is simply a pure, straight-out lease, pending the determination of the title.

Lieut. Commander RICHARDSON. I know you are wrong.

Senator PITTMAN. But it was anticipated that this act should be enforced in the naval reserve, because at the time the bill was before the House Committee on the Public Lands the Navy Department requested that the naval lands be excluded from the operation of that bill, and the Public Lands Committee refused to make that exception and voted it down. The bill expressly provides that the royalties within naval reserves shall go to the Navy. That is the provision of it.

Senator BRADY. Whether the man in the end proves that he was the rightful owner or not?

Senator PITTMAN. You may be right, but the main question is whether or not that would relieve the situation.

Senator JONES. I should like to ask you whether or not you and Mr. Hoover had had any conferences with the Navy Department regarding the relative importance of maintaining the reservation of the Navy and the use of the oil?

Dr. WILBUR. I have had two conferences with Secretary Daniels personally at which I have told him just about what I have said to you and asked him to reconsider his decision in the matter as a matter of national expediency at the present time in order that California may play its part in the present contest.

Senator JONES. Have you had any reconsideration or change?

Dr. WILBUR. The general understanding I had following my last conversation was that he would reconsider it on that basis; that if it were a matter of national service——

Senator JONES. But so far no determination by the Navy Department?

Dr. WILBUR. I have heard of none.

Senator PITTMAN. Let me read this act, please. I want to read the act which is now in force, and if enforced by the Department of the Interior and not obstructed by the Navy Department, it will produce sufficient oil, and it was passed for that purpose by Congress.

Senator BRADY. You are referring now to what?

Senator PITTMAN. To the act of August 5, 1914, 38 Stat., 708. It is as follows:

> That where applications for patents have been or may hereafter be offered for any oil or gas land, included in any order of withdrawal upon which oil or gas has heretofore been discovered or is being produced, or upon which drilling operations were in actual progress on October 3, 1910, and oil or gas is thereafter discovered thereon, and where there has been no final determination by the Secretary of the Interior upon such application for patent, said Secretary, in his discretion, may enter into agreements under such conditions as he may prescribe with such applicants for patents in possession of such lands, or any portion thereof, relative to the disposition of the oil or gas produced therefrom or the proceeds thereof pending final determination of the title thereto by the Secretary of the Interior, or such other disposition of the same as may be authorized by law. Any money which may accrue to the United

States under the provisions of this act from land within the naval petroleum reserve shall be set aside for the needs of the Navy and deposited in the Treasury to the credit of a fund to be known as the Navy petroleum fund, which fund shall be applied to the needs of the Navy as Congress may from time to time direct by appropriation or otherwise.

The bill expressly provides for a fund accruing out of this which shall be deposited to the credit of the Navy and there is not any provision in that act whatever to the effect that that fund shall ever go back to the——

Senator BRADY. A very unfair and unjust law and ought to be amended.

Senator PITTMAN. I introduced the law, and I introduced it for the sole purpose not of benifiting the patentee in the matter at all but for the purpose of continuing the protection of oil pending the litigation, instead of having it either tied up or worked under a receiver. This act was simply passed so that a man might become a temporary lessee, and that the Government might contract for a royalty. The act provides for a lease; it provides for the part of the oil going to the Government; it provides that part of the oil coming out of a naval reserve shall go to the Navy to be deposited to the credit of the Navy.

Senator BRADY. Do you think that is a fair law?

Senator PITTMAN. I think, as a temporary expedient, that it serves exactly the purpose of receiver, that pending the determination of title as to whether the Government owns it or the claimant owns it, that it shall be operated as it would be under a receiver.

Senator HUSTING. You contend, Senator, that means they can enter into that sort of an agreement with a man that has obtained his possession of this field by fraud, or unlawfully and contrary to statute, and that that is fair to say that this eighth royalty shall be placed in the Treasury, and if the Government wins that is all it gets, and if it loses it loses all?

Senator PITTMAN. Let me answer that, Senator. If the Government owns this land it would probably lease it on that same royalty that it gets out of this contest. In other words, the very theory of this whole bill is that the Government, with regard to all of the oil lands it owns, intends to lease it, and all it ever gets out of all the oil land it owns to-day is a royalty. That is the theory of this bill.

Senator HUSTING. That theory may be all right, but as the law stands to-day, so far as concerns the naval reserve, the Government is not going to lease it out; it is going to retain that oil and use all of the oil for the Navy, as I understand it.

Senator PITTMAN. The situation is this: To-day they are operating the existing wells in this contest under a reserve which certainly costs the Government something, and while it may not cost the Government as much as the Government would part with under a lease on the royalty basis, still, under this act the Secretary of the Interior can charge as much royalty as he wishes. He can make just as much money out of this contract as he could possibly make in operating it under a receiver. But let me tell you one thing——

Senator NORRIS. This discussion is interesting, but what about this witness and other witnesses who were to be heard to-day?

Senator PITTMAN. I know, but we are discussing something enlightening to some, and it may be enlightening to Senator Brady.

He asked the question, and I thought, as he is a new member on the committee, he might wish to be enlightened on the subject. Of course, Senator Husting assumes the Government owns this land; he assumes there has been fraud. In every contest the plaintiff assumes he owns the land, whether it is the Government or somebody else, and he always charges fraud, or some other ground, in support of his complaint. The defendant denies there is any fraud or any ground for complaint. In other words, there is a contest of title, and the only question is as to whether or not it is to lie dormant during that period of time or whether it shall be operated under a formal agreement between the Secretary, representing the Government, and the claimant.

The ACTING CHAIRMAN. It was very well said, as brought out in the testimony last year, there is a danger that the property be injured unless operated.

Senator PITTMAN. The Secretary of the Navy favored the enforcement of that act.

Senator BRADY. Has it been done?

Senator PITTMAN. No; it was not done, as the testimony shows here, because the Secretary of the Interior requested it be not done.

Senator HUSTING. I want to say that my assumption that there has been fraud there was based on the result of the trials already had in court. In every instance except one, I think, the Government has been successful, on the ground that there have been fraudulent entries and consequently have annulled the claim. And, secondly, I just want to put down as my impression of this law that it does not authorize the Secretary of the Interior to treat with men upon a contractual basis who are themselves in possession through fraud.

Senator PITTMAN. Just one other question. Of course, that is a matter to be determined later, whether it is fraud. In the last four or five days cases instituted by the Government in section 2 here [indicating on map] and three-fourths of section 28, in which fraud was charged, have been decided by the District Court of California, Judge Bean presiding, that the Government was in error in its charge; that the claimants were entitled to the property.

Senator HUSTING. When were those decided?

Senator PITTMAN. About a week ago.

Mr. GILLETTE. There are others down there in which there is no fraud.

The ACTING CHAIRMAN. Does the decision affect the ownership?

Mr. GILLETTE. Determines they have a patent in fee.

Senator PITTMAN. It maintains the contention in the ownership cases.

Senator HUSTING. You have not on this map the cases where the Government not only charged fraud but has proven fraud and secured verdicts in its favor?

Senator PITTMAN. There is not a case in oil reserve No. 2, and that is the matter we are discussing right now, in which the courts decided a case of that kind.

Senator HUSTING. Then it is some other reservation. It is one of them.

Senator PITTMAN. There is one other matter: That these cases in No. 28 were the ones testified to by Mr. Justice as being the most flagrant cases of fraud in that whole reserve, and that decision was in one of the first suits instituted by Mr. Justice, representing the Department of the Navy, because he considered it his strongest suit, and now the district court has decided in favor of the defendants in that case and wiped out those charges.

Senator BRADY. Let me just say a work, Mr. Chairman. Let us take the case that the Senator from Nevada has called attention to. It has been tried; it has been found that his title was perfect and that he had not committed fraud, and under this law here the Government might have been taking the oil out of there for five years and never have given a penny for it and never have given back anything, even; is that correct?

Senator PITTMAN. That is as I recall——

Senator BRADY. I say that is certainly unfair. What should be done with this section, introduced by the Senator from Nevada last year and passed, is to make it mandatory upon the Secretary of the Interior to lease at a fair and equitable price, the money to be deposited in the United States Treasury, or some bank, and then if the Government wins it takes its money, and if the Government does not win and the man has title, as this man had, the money should certainly be returned to him.

Senator PITTMAN. Senator Brady, we could not pass an act of that kind if we wanted to. The object, first, was to meet the very contentions Senator Husting made. It is to treat the Government as the owner of it until it was decided that the claimant was the owner; to give every benefit of the doubt to the Government. That is what we were doing, and the men occupying that land at the time and claiming it were satisfied with this act. They were satisfied with anything, to tell the truth about it. They had gone to an expense of hundreds of thousands of dollars, it was tied up, and they were about to go broke, a lot of them, and they were anxious to do anything, and said, "We are willing to treat the Government as the owner of this property until we prove we are the owners of it, and we will lease it from the Government on such terms as the Government may establish and require of us. That is the fact about it.

Lieut. Commander RICHARDSON. I think Senator Pittman unconsciously made a mistake, because this bill plainly reads:

> That the said Secretary, in his discretion, may enter into agreements under such conditions as he may prescribe.

Now, in one contract which he has drawn, it expressly states that if it should be finally decided that the claimant is entitled to the land, that all the money deposited shall be paid to him in escrow, and that no money can accrue to the Government under this act unless the application for patent is denied and it is finally decided that the land does not belong to him.

Senator BRADY. That seems absolutely the only fair way.

Lieut. Commander RICHARDSON. Absolutely, in everyone of the contracts.

Senator PITTMAN. I will state here that it gives the power to the Secretary to make any kind or character of contract he sees fit. The act itself does not require that, and the men who brought this matter to my attention—one of them sitting right here—were willing simply to treat the Government as the owner and let it take their money forever. And the second provision there, referring to the naval reserve, shows that power. It says:

> Any money which may accrue to the United States under the provisions of this act from land within the naval petroleum reserves shall be set aside for the needs of the Navy and deposited in the Treasury to the credit of a fund * * *.

The ACTING CHAIRMAN. The fact remains that the Secretary refused to make any contracts of that kind with claimants within the naval reserve. Now, the contracts that were made outside the naval reserve contain that provision you read.

Lieut. Commander RICHARDSON. Yes, sir; and also contain the further provision that they shall deposit one-eighth of the proceeds, and if it be finally decided they have no right to the land that they have committed fraud, or the Government can receover the one-eighth.

The ACTING CHAIRMAN. Why does the Navy, as the terms are so favorable, why does the Navy refuse to allow the leases to be enforced in the naval reserve?

Lieut. Commander RICHARDSON. Because if it should be finally decided the man was there by fraud in violation of law and had absolutely no right, he could keep seven-eighths and we could not possibly recover more than one-eighth.

Senator PITTMAN. Would you be satisfied within that reserve if the royalty went absolutely to the Navy Department?

Lieut. Commander RICHARDSON. What do you mean, one-eighth?

Senator PITTMAN. Yes.

Lieut. Commander RICHARDSON. Well, the Secretary of the Navy would not be satisfied.

Senator PITTMAN. Would the Secretary of the Navy be satisfied if the Secretary of the Interior determined what was a reasonable royalty on it, and it should go absolutely to the Navy Department?

Lieut. Commander RICHARDSON. The Secretary last year, when Senator Swanson proposed an agreement, then expressed the limit to which he would go, and, as far as I know, has not changed his mind.

Senator PITTMAN. This act here does not require, as I understand it, the Secretary to make the leases he is making; it allows him to make any agreement at all?

Lieut. Commander RICHARDSON. Yes.

Senator PITTMAN. And when this matter was before the Naval Affairs Committee and Secretary Daniels was there, it was then asked of him if he would consent to a leasing; a leasing, now mind you, an absolute leasing, no contract, and that the money should be held in escrow and given to the party that would win, but that he consent to an absolute leasing to the claimants of the wells they had sunk, with a prohibition that they should not sink any more, and he would not agree to that.

Lieut. Commander RICHARDSON. He did agree to that.

Senator PITTMAN. The writings here showed he would not.

Lieut. Commander RICHARDSON. I have a copy of a letter sent to you showing he did agree to it.

Senator PITTMAN. Agreed they could lease these wells?

Lieut. Commander RICHARDSON. Lease the actual well, without any right to drill wells.

Senator PITTMAN. Yes; but they had to surrender their claim of title.

Lieut. Commander RICHARSON. Yes, sir.

Senator PITTMAN. Oh, yes; they absolutely had to surrender their claim of title; he would not allow them to contest their title.

The ACTING CHAIRMAN. Do I understand the decision recently in Dakota shows the Secretary has made a mistake in judgment in not allowing the operation to go on? The Navy would have been so much ahead in the royalties collected if it had entered into that contract with these gentlemen at that time?

Senator PITTMAN. Undoubtedly.

The ACTING CHAIRMAN. So the Navy has actually suffered a loss?

Senator PITTMAN. It has——

Senator BRADY. In addition to that it has done an injustice to the investor.

Senator PITTMAN. Every body has lost.

Senator BRADY. It seems to me, though, from what little I have heard here this morning, that if we will get together and present the matter properly to the Secretary of the Interior or to the Secretary of the Navy, that some satisfactory arrangement might be made under this very section.

The ACTING CHAIRMAN. These decisions may have some effect.

Senator PITTMAN. Senator Brady, we had every member of the department here, the Secretary of the Navy representing the Navy, and the Department of Justice; and we sat around this table for a week trying to agree on something and we never could.

Senator BRADY. Just so I may place myself properly before the committee. I want you to tell me whether or not this committee offered to permit the Government to make a lease with these men, let the Government name whatever royalty it thought was fair?

Senator PITTMAN. Yes.

Senator BRADY. And then deposit the entire amount of money from the sale of the oil in some bank or in the Treasury Department, to be delivered to either the Government or the claimant in case he won the suit?

Senator PITTMAN. Undoubtedly.

Senator BRADY. And they refused to do that?

Senator PITTMAN. That was done in regard to lands outside the reserve, and the Department of the Interior, as testified to by the Commissioner of the Land Office, Mr. Tallman here, was willing to let the same kind of leases inside the reserve under the same conditions as outside, but did not do so because the Secretary of the Navy requested them not to do so.

Senator BRADY. I am not very well acquainted with the Secretary of the Navy, but I am glad to know that Mr. Tallman recommended that, because I do not believe Mr. Tallman or the Secretary of the Interior would ever refuse to do a thing that was fair.

Senator PITTMAN. It has now got down to the point where we are short of oil in the country. The demand for oil by reason of automobiles, and the great ships that we are going to build now that will be oil burners, and everything else is increasing at an enormous rate. The Government losing its cases, there is no preparation to produce oil, and we are going right back to where we were three or four years ago on this case when we first started these hearings.

The Acting Chairman. The arguments, then, have been in favor of the Secretary of the Interior, and the necessities of the situation will compel this committee to reach a solution of the matter, because the oil is absolutely needed, and we are not providing for generations very far in advance of this generation, because we may not survive the result of this war. The whole logic of the situation favors a solution of this question on equitable lines, as we have always contended.

Senator Husting. This, of course, is too big a question to discuss here at this session. I just want to add right there that the trouble with this situation is, if the Navy is going into the building of oil-burning ships, and if it is going to insure its efficiency in the future, it has got to have a supply it can put its hands on when it needs it.

Senator Pittman. Where is it going to get it?

Senator Husting. If these various bills go through, they will not get it anywhere. They might just as well scrap their ships and quit.

The Acting Chairman. There will be no Navy in the future unless we win this war, possibly.

Senator Brady. I know very well the Senator from Wisconsin always means to be fair. I want to ask him the direct question, Do you not believe it would be fair where a man owns leases, say, 160 acres of oil land, or has a claim to it, and has spent, we will say, $100,000 in sinking wells, do you think it would be fair to permit him to go on with a lease on that land by the Secretary of the Interior at the usual lease price, say, one-eighth, or whatever they are during the pendency of this trial, and deposit every dollar of the money, not only the one-eighth but the other seven-eighths, in the Treasury of the United States, to be given to him if it is proven in the end that that is his land?

Senator Husting. This involves too long a discussion for me to give you a complete answer. But I will state my position: That when this Government undertakes to do something which it considers vital and necessary for the national welfare, that I do not think it ought to treat with men who have come into possession in violation of order and law and give them the status of regularity and to keep other men out, men who have been law-abiding citizens—deprive them of the privileges which they might have enjoyed had they desired to violate the law and disregard the order of the Government and the laws of the United States and become parties to fraudulent entries themselves. In other words, I think it is about time to establish a policy in this Government that men can not work their way into governmental favor through fraud.

Senator Pittman. Those same cases right there, sections 28 and 2, were the cases argued by Mr. Justice before this committee as the chief cases of that character.

Senator Husting. Why not talk about those which were tried and the fraud proven?

Senator Brady. I am talking about cases where fraud has not been proven and can not be proven.

The Acting Chairman. The great bulk of these cases are not affected by fraud in the ordinary sense. The land has been withdrawn after the man made legal entry under the placer-mining law, so the Government is on trial for having violently taken possession of lands against a contract which existed in the public laws with the locators, just as the case cited by Senator Shafroth, but there the Government had reserved the right to change the terms of the lease, but in this case there was no reservation; you go on and perfect your title. So the whole question hinged on whether the men had diligently prosecuted their work, and the courts decided in those cases in favor of the locators. Thus, setting aside the question of fraud——

Senator **Pittman**. I hope you will excuse me, Mr. Chairman. I am on another committee in which we are having the final arguments of counsel, and that is the reason I can not stay and the reason I have not been in attendance on this committee heretofore, although I have attended the hearings the past three years of a similar character and am somewhat familiar with the subject.

I simply want to state this: I hope this hearing does not turn out like about 20 other hearings on this same subject we have had. I trust very sincerely that the Navy Department will recognize that they can not win these suits and develop oil on their own behalf in time to furnish the increased tonnage that we are looking to make in the next 12 months. They have no plan offered here by which they are going to produce oil for the enormous fleet of oil burners which this Government is now building, and the only plan is that which has been suggested by Dr. Wilbur, and that is that they develop the known oil fields for the present emergency. The Secretary of the Interior has constantly, at least lately anyway, been in favor of a reasonable development of these fields. He never believed the conditions were such in naval reserve No. 2 that it could ever be a permanent reserve, and that has been the general opinion. But I want to say that it makes no difference what this committee reports, there is not any chance in God's earth of ever passing a bill for the development of the oil fields until the Secretary of the Navy is willing to meet the Secretary of the Interior in a spirit of compromise in this matter. And if he is not ready now to meet the Department of the Interior, that has the sole jurisdiction of all the public lands, and at least concede something to his knowledge of conditions, there never will be any legislation on oil. And the responsibility will fall on the Secretary of the Navy.

The responsibility to-day for the condition of the oil in this country lies at the door of the Secretary of the Navy. There would have been twice as much oil produced in that field alone—yes, three times as much, if the Secretary of the Navy had not obstructed the mandate of Congress under that act of 1914. It expressly authorized the Secretary of the Interior to execute those leases; it expressly authorized him to execute them in that naval reserve, and he had no authority under law whatever to refuse to do it simply upon the request of the Navy Department, or anyone else. To that extent the Secretary of the Interior is responsible for the deplorable condition that exists to-day. The Secretary of the Interior to-day is ready to stand between the Government and these claimants and do the fair thing, not only by them but by the Government, and I say it right to-day, and I charge it now, that if this legislation is not consummated the Secretary of the Navy will hold the responsibility and it will not be the Senate of the United States or this committee.

The **Acting Chairman**. Mention has been made here of a recent decision. Have you got it so it may be put in the record?

Senator **Pittman**. Yes.

(The decision referred to is here printed in full, as follows:)

IN THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF CALIFORNIA. IN EQUITY.

UNITED STATES OF AMERICA, *plaintiff*,
v.
NORTH AMERICAN OIL CONSOLIDATED, PIONEER MIDWAY OIL CO., UNION OIL Co. of California, Producers Transportation Co., Walter P. Frick, John F. Carlston, Clarence J. Berry, Dennis Searles, Walter H. Leimert, and Wickham Havens, *defendants*. } A-48.

Frank Hall, special assistant to Attorney General, for plaintiff; Charles S. Wheeler, A. L. Weil, and D. S. Ewing, all of San Francisco, Cal., for defendants.

R. S. Bean, district judge (sitting by special assignment).

This is a suit by the Government to oust the defendants from the possession of section 2, township 32 south, range 23 east, Mount Diablo meridian, oil-bearing lands in the State of California, and require them to account for and pay over to it the value of oil taken therefrom.

The legal title to the land is in the United States. It is included within the area described in the presidential withdrawal order of September 27, 1909. No discovery of oil had been made on any part of the premises at the date of such order. The Pioneer Midway Oil Co. was in possession thereof at the time, and it is claimed was in diligent prosecution of work leading to discovery of oil, hence it is said that the land was, by the terms of the order, excluded therefrom because it was "a location or claim existing and valid" at its date, but if this is not so, the oil company and its successors in interest have a right to retain possession and extract the oil under the proviso of the act of Congress of June, 1910, commonly known as the Pickett Act, which reads:

"That the rights of any person who at the date of any withdrawal order heretofore or hereafter made is a bona fide occupant or claimant of oil or gas bearing lands, and who at such date is in diligent prosecution of work leading to discovery of oil or gas, shall not be affected or impaired by such order so long as such occupant or claimant shall continue in diligent prosecution of said work." (36 Stat. 847.)

In view of the conclusions I have reached on the second question, it is not necessary to consider the first.

That the Pioneer Midway Oil Co. was an actual bona fide occupant and claimant of the property at the date of the withdrawal order for the purpose of acquiring title under the mining laws is clear, but the position of the Government is that it was not then in diligent prosecution of work leading to discovery within the meaning of the Pickett Act.

There is but little if any dispute about the material facts. In January, 1907, while the land in controversy was public land of the United States, subject to entry under the mining laws, Mr. Strasberger and his associates, all of whom were qualified entrymen, acting in good faith, posted notices on each quarter section thereof and had such notices recorded in the proper county, claiming the same under the placer mining laws. In August of that year they conveyed or transferred their interests to the Pioneer Midway Oil Co., and late in 1908 or early in 1909 the oil company, intending to explore the property for the discovery of oil as soon as practicable, went into possession of the four claims. It thereupon purchased the necessary material and caused to be constructed on each claim a derrick and a building or buildings for the housing and accommodation of the employees. The buildings so erected were designed and intended for use in the development and operation of the entire section, and were such as were common in the oil fields, and necessary and proper for that purpose. The derricks were substantial structures, designed and subsequently actually used for drilling.

By the end of June, 1909, these improvements were practically completed except the hanging of the tools and setting of the boilers. Two boilers (all that were available in the community) had been purchased and transported to the property, but not set up. Thereafter, up to and at the time of the withdrawal order, employees of the oil company were on each quarter section as keepers, digging cellars, clearing up sagebrush, and doing other preparatory work. Tools had not been hung in the derricks or the boilers set up because the oil company had been unable to obtain assurance of an adequate supply of water for boiler and drilling purposes. The land in controversy is in a semiarid section of the country, and at the time of the withdrawal order water was secured with great difficulty. Large quantities of water are required to drill an oil well, and a dependable supply is necessary, not only for use in the boilers but in the well itself for drilling and to prevent the walls from caving and the casing freezing. It costs from $25,000 to $50,000 on an average to sink a well in the territory in question, and it would be imprudent to begin drilling without an adequate supply of water to enable the work to proceed continuously; otherwise their well would probably be lost and the expenditures be for naught. Attempts had been made without success to develop water on the land in question, and it had to be brought from a distance. The only available sources were the Stratton Water Co. and a plant belonging to the Santa Fe, semipublic-service concerns, and transportation by rail from Bakersfield, a distance of 50 or 60 miles. None of these sources was dependable, and none had any surplus to sell or would guarantee any definite supply of water to its customers. Neither the Stratton Water Co. nor the Santa Fe had piped water to a point nearer than several miles to the land in question. The Stratton Co. had more customers connected with its plant than it could supply, the Santa Fe company was not then selling water for drilling purposes, and transportation by rail from Bakersfield was irregular, uncertain, and inadequate. The Stratton Water Co. and the Santa Fe people, however, were engaged in enlarging their plants by sinking new wells, laying additional mains, and installing new machinery, and held out the reasonable hope and promise that they would soon be able to furnish an adequate supply of water. For these reasons the oil company did not commence drilling, although intending to do so as soon as water could be secured, but remained in possession of each quarter section, with keepers or watchmen in charge and employees doing more or less work, until March 1910, when it disposed of its interests to Laymance and his associates, referred to as No. 2 syndicate.

About this time the Stratton Water Co. had enlarged its plant and increased its facilities by installing additional machinery and bringing in another well, and soon after the purchase by No. 2 syndicate a water line was laid from its plant to the property, the derricks previously built by the oil company rigged up, and drilling actually begun on the southeast quarter on May 4, 1910, the southwest quarter June 20, 1910, the northwest quarter July 25, 1910, and the northeast quarter September 5, 1910, since which time and prior to the commencement of this suit numerous wells have been drilled and oil in commercial quantities discovered on each quarter section.

The Pioneer Midway Oil Co. expended while in the possession of the property, in the erection of buildings, derricks, and the like, about $10,000, and there has been expended by its successors in interest in sinking wells and developing the property more than half a milliion dollars.

The question for decision is whether these facts show the oil company to have been in diligent prosecution of work leading to discovery on the several claims at the date of the withdrawal order, within the meaning of the Pickett Act.

A statement in general terms of the conditions applicable to all cases arising under this act, and which should govern in determining whether the requisite diligence existed, is difficult if not impossible. What constitutes diligent prosecution of work does not lend itself to exact definition. Diligence is a relative term and what is due diligence in a given case must be determined by the circumstances. Chief Justice Lewis, in Mining Company *v.* Carpenter (5 Nev., 546), says that it "is that constancy or steadiness of purpose which is usual with men engaged in like enterprises. Such assiduity in the prosecution of the enterprise as will manifest to the world a bona fide intention to complete it within a reasonable time. It is the doing of an act or series of acts with all practicable expedition with no delay except such as may be incident to the work itself," and that "the law does not require an unusual or extraordinary effort but only that which is usual, ordinary, and reasonable."

And the Supreme Court of Californai, in McLemore *v.* Express Co. (112 Pac., 59), says that diligent prosecution of work of discovery on an oil mining claim "does not mean the doing of assessment work. It does not mean the pursuit of capital to prosecute the work. It does not mean any attempted holding by cabin, lumber pile, or unused derrick. It means the diligent continuous prosecution of the work with the expenditure of whatever money may be necessary to the end in view."

To bring an occupant or claimant of oil or gas bearing lands within the provisions of the Pickett Act it is not necessary that he was engaged in actual drilling for oil or gas on a particular tract at the date of withdrawal (U. S. *v.* Grass Creek O. & G. Co., 236 Fed., 481), or necessarily that work was then being performed upon the identical claim upon which discovery must ultimately be made in order to make locations. It is enough if reasonable effort was being made at that time indicating a bona fide intention to complete the work of discovery on the particular claim with all practical expedition, such intention being manifested by the doing of physical act or acts which had a direct tendency to facilitate the exploration for and discovery of oil or gas thereon, although drilling had not commenced and the work may not have been on such claim. (Smelting Co. *v.* Kemp, 104 U. S., 636; U. S. *v.* Thirty-two Oil Cos., just decided; U. S. *v.* Ohio Oil Co., 240 Fed., 996.)

Diligent prosecution of work leading to discovery upon a mining claim depends so largely upon the physical conditions of the locality, the nature and situation of the region, its accessibility, the magnitude of the work, the difficulty of securing material and supplies, and the like, that each case must rest largely on its own facts and circumstances, and a decision in one is of but little assistance in another. Since, however, the law does not require any unusual or extraordinary effort, but only that which is usual, ordinary, and reasonable under the circumstances, I am of the opinion that the oil company was in diligent prosecution of work leading to discovery at the date of the withdrawal within the meaning of the Pickett Act. It was when overtaken by the withdrawal, and for months before had been, in occupation of each claim engaged in work necessary and proper in order to effect a discovery thereon, with the then present bona fide purpose of completing such work with all reasonable expedition, and was at the date of the withdrawal doing all that could reasonably and justly be expected of it under the circumstances. The law does not require a vain or useless thing to be done, and therefore the oil company was not required by the law of diligence to have installed all its machinery or commenced drilling before its supply of water was such that it could reasonably hope to successfully continue the work. Nor was it required to make an unusual or extraordinary effort to obtain water, but only such as was reasonable under the circumstances confronting it. Its possession, the work which it had done and was then doing, were such that it would have been protected by the courts from intrusion by private parties if the order had not been made. (Cosmos *v.* Eagle Hill, 112 Fed., 4; McLemore *v.* Express, 112 Pac., 59; Miller *v.* Chrisman, 73 Pac., 1083; 197 U. S., 313; Bogwardt *v.* McKittrick Oil, 130 Pac., 417; Rooney *v.* Barnette, 200 Fed., 700.) And that, I take it, is the true test in cases of this character.

It is contended, however, on behalf of the Government, that even if the oil company was in diligent prosecution of work leading to discovery at the date of the withdrawal, such diligence was not continuous thereafter I do not think it necessary to carefully weigh the testimony on that point. The evidence shows that the oil company and its successors in interest never abandoned nor intended to abandon the property, but remained in possession, proceeding with the work of development in good faith with more or less diligence until the actual discovery of oil. Discoveries had been made and oil developed on each claim prior to the commencement of these suits, at an aggregate expense of more than half a million dollars, and it is now too late, in my opinion, for the Government to question the defendants' right to the possession and to the oil contents because it may be that at some time during the progress of their work since the withdrawal and prior to discovery they were not as diligent as they could have been. It is true, the Pickett Act provides that the right of a bona fide occupant or claimant at the date of a withdrawal order, and who was at such time in diligent prosecution of "work leading to discovery," shall not be impaired or affected so long as such occupant or claimant shall continue in diligent prosecution of "said work," referring logically to work leading to discovery, thus implying that when discovery is made his right shall no longer continue. It can not be supposed, however, that Congress intended any such result. The duty, therefore, devolves upon the court to search out the true meaning of the law, and to permit the spirit and reason to prevail over the latter. (U. S. *v.* Mulvey, 232 Fed., 513; Holy Trinity *v.* U. S., 143 U. S., 457.) And so construed, it conferred upon an occupant or claimant of withdrawn land who is within its provisions the right to continue his work to a discovery, and the benefit thereof, as if the land had not been withdrawn, with the same right in the Government to reenter, if the diligence was not continuous, as a private citizen would have had if the land had not been withdrawn. The history of this and subsequent legislation, it seems to me, confirms this view. (See act of Mar. 2, 1911, 36 Stat., 1015.)

Anomalous as it may seem, public land containing petroleum or other mineral oil and chiefly valuable therefor could, at date of withdrawal order, have been entered and patent obtained only under the placer-mining law (29 Stat., 526). No location of a placer claim valid against the Government could have been made until the discovery of mineral within the limits of the claim. (R. S., secs. 2320–2329.) Hence there could have been no such location of an oil claim until the discovery of oil. The oil measures in the district in question, however, lie far below the surface, often three or four thousand feet, and can be reached only by great labor and expense. The installation of elaborate and expensive machinery, months of time and the outlay of many thousands of dollars were therefore required before a valid location could be made. There was no law, State or National, at the time of the withdrawal authorizing or requiring the marking of boundaries of mining locations or the posting and recording notice of an intention to locate a mining claim prior to discovery, or declaring the effect of such notice or the failure to give it. In view of the conditions, however, and the necessities of the case, a practice had grown up to mark the boundaries and post on the land and record in a public office so-called notice of location, which operated by common consent as a manifestation of a purpose on the part of the parties named therein to claim the land within the described boundaries, and give to them or their assignees a preference right to the possession. This right had been recognized by the local courts as transferable, and the possession of a bona fide occupant or claimant holding under such location was protected against all forms of forcible or clandestine entry or intrusion by third parties, while he was in good faith diligently engaged in work leading to discovery, in order that he might make discovery, which when made would relate back to date of notice. (McLemore *v.* Express, supra; Miller *v.* Chrisman, supra; Bogwardt *v.* McKittrick, supra; Rooney *v.* Barnetter, supra.)

This situation was called to the attention of Congress and it was represented to it that at the time of the withdrawal of September, 1909, which came without notice and without giving interested parties an opportunity to be heard, land within the withdrawn area in California was thus occupied by persons and corporations who were in good faith engaged in the actual work of exploration with the bona fide intention of complying with the mining laws, but had not yet discovered oil. There was no statutory law protecting such an explorer against the Government or giving him any vested right against it, even that of occupation, although he was in possession by its invitation and under its promise, implied if not expressed, to permit him to retain possession and acquire the benefits of a discovery if it should be subsequently made. (R. S., 2319-2325.) For the Government, under these circumstances, to have summarily dispossessed and ousted such occupants or claimants, confiscating the results of their labor and improvements, would have been a great hardship if not a positive wrong. It was recognized that if the withdrawal order was valid (a question then undetermined), the interests of such parties were probably destroyed and their expenditures lost unless relief was afforded, and hence Congress in recognition and confirmation of their rights as recognized by the local laws and the moral obligation of the Government inserted the provision in the act of June, 1910, for their benefit and in view of the existing conditions made known to it at the time. It is remedial legislation and should be construed to carry out the intention of Congress. Whether it was intended to reward an occupant or claimant engaged in the work of discovery at the date of a previous withdrawal, and who continued therein in defiance thereof, and penalize one so engaged but who stopped his work out of regard for the order until he could lawfully proceed, or whether it was intended to require continuous diligence after the passage of the Pickett Act is not clear; but the question is not material, I take it, where the required diligence existed at the date of withdrawal, and there has been no subsequent abandonment of the claim, but possession retained and actual discovery made prior to reentry by the Government or the commencement of an ouster suit.

Bill will therefore be dismissed.

(Indorsed:) No. A 48, United States District Court, Southern District of California. Northern Division. United States of America *v.* North American Oil Consolidated et al. Opinion. Filed June 7, 1917.

WM. M. VAN DYKE, *Clerk.*
By R. S. ZIMMERMAN, *Deputy Clerk.*

Senator HUSTING. I just want to say this as to the severe attack which has been made on the Secretary of the Navy, that as one of the commitee I want to express my admiration for the fidelity of the Secretary of the Navy for the interests which have been placed in his care, and to say that I know he has acted purely from a sense of what he considers the right to be in conserving the best interests of the Navy and the country.

Senator JONES. This happens to be the first session of this committee I have had an opportunity to attend. I have been very closely engaged in attendance on another committee, and I should like to make the inquiry whether this session is for the purpose of discussing the question of policy, to appear in the record, or for the purpose of listening to witnesses to give us a statement of facts?

The ACTING CHAIRMAN. It is for the purpose of hearing testimony and facts; but, of course, Senators are accustomed to do very much as they please and there is nobody to restrain them unless by formal motion.

Senator JONES. Then I move that we proceed to the examination of the witnesses and endeavor to get at the facts.

The ACTING CHAIRMAN. If there is no objection, that will be the order, and we will hear no further argument by members of the committee. Is that the purpose of your motion, Senator?

Senator JONES. Yes, sir.

Senator BRADY. Are we called together, Mr. Chairman, for the purpose of considering some special bill, or general conditions relative to oil production?

The ACTING CHAIRMAN. There is a bill (Senate bill 45) proposed by Senator Walsh, to encourage and promote the mining of coal, etc. We have not taken up the items of the bill in order, but we are listening to witnesses now on the general subject. There are some members of the committee in favor of ownership in fee simple and others by the leasing system. Witnesses are interrogated as to their opinion as to the best plan for the development of the particular commodity, whether by leasing or ownership in fee.

Senator HUSTING. I should like to ask Dr. Wilbur just one more question. Now the oil in the naval reserve, can you tell us what proportion that oil in the naval reserve bears to the total visible supply of California?

Dr. WILBUR. No, sir; I can not.

Senator HUSTING. It is about 8 per cent, is it not?

Dr. WILBUR. It is comparatively small, but it is the one source where immediate production is possible.

Senator HUSTING. Why is that?

Dr. WILBUR. Because it is shallow and proven territory.

Senator HUSTING. Is the other oil entirely undeveloped?

Dr. WILBUR. No; there are scattering wells in other places, but we have no time and no tubing or pipe, and it is more or less of a prospect in the other fields as to how deep we go.

Senator HUSTING. Is not pipe procurable at all?

Dr. WILBUR. Probably not procurable except in limited quantities unless we can get some specific recommendations to that effect through the Council of National Defense or some other body with authority.

Senator HUSTING. Have you any figures to show what demand there is for piping there and whether this demand was met, or how far it was not met?

Dr. WILBUR. I only have statements made by different men that they were unable to secure the necessary piping, and the only solution they saw was to get the Government to requisition the pipe and distribute it to them so they could take care of this emergency.

Senator HUSTING. Right there, if other wells are going to be dug in this naval oil reserve they will have to have piping, will they not?

Dr. WILBUR. Yes; they will have to have piping; that is why we ordinary citizens of California are very much interested in a prompt solution of this thing. On the one hand we see this disputed territory with a contest over it here delaying matters, and on the other hand we see the necessity of at once getting something done so we can get this piping, which will take six months, and at the end of a year we see another difficulty piling up on us.

Senator HUSTING. The point I am trying to get at, maybe I misunderstood you, that they could not develop the oil lands outside of the reserve because they could not procure piping to do it.

Dr. WILBUR. Yes.

Senator HUSTING. Still with that oil reserve you would have to have the equivalent amount of piping?

Dr. WILBUR. My point is that is shallow territory and the other is deep territory and takes much more piping, so we shall probably need less piping, and the other is more of a prospect than this territory here.

The ACTING CHAIRMAN. The point you are trying to make is that the California industries, and there are a great many of them, can not get its own oil in sufficient quantities to operate its own plants, railroads, and industries?

Dr. WILBUR. That is it, Senator.

The ACTING CHAIRMAN. And can not get the oil from Tampico?

Dr. WILBUR. That can not be done.

The ACTING CHAIRMAN. So their industries will languish unless oil is secured?

Dr. WILBUR. Maybe worse than languish, because you can not go on with transportation and necessary production of that State, and that also means that the other financial and banking fabric is apt to suffer, so it puts the State in a very difficult position.

The ACTING CHAIRMAN. So you desire that the wells be operated on some basis by which the Navy gets its share?

Dr. WILBUR. That is what we want. It makes no particular difference to the ordinary citizen of California what the solution is, so long as it is a prompt solution and gives us an additional production of oil within the next two years, giving us time to go ahead and develop the hydroelectric power and the use of powdered coal. Somebody has said that California is something like the cow in dispute between two owners—is locked up in the corral and nobody to feed her.

Senator BRADY. All you want is an opportunity to develop some method by which you can furnish your people with a sufficient amount of fuel of some kind?

Dr. WILBUR. That is the point exactly.

The ACTING CHAIRMAN. I suppose if these industries languish, or, as you say, worse, they can not contribute to the liberty bonds or to the taxation likely to be imposed?

Dr. WILBUR. It can only be done with a great deal of difficulty if at all.

The ACTING CHAIRMAN. So the cow will be dead.

Senator HUSTING. To get your attitude, I just want to ask you this: Whether you think then that this matter of the needs of California is more important at this time than the future of the Navy, because it is obvious to you, is it not, that if this naval reserve is turned over for public entry that we might as well give up the idea, as suggested by Senator Brady, of having a permanent oil-burning Navy?

Dr. WILBUR. As I understand it, the immediate relief of California would come if only naval reserve No. 2 is disturbed and used.

Then there are other naval reserves, Nos. 1, 3, and 4, and over here is an indication that there are something over a billion barrels of oil in those reserves. Also the life of a battleship is very short. No one can tell how long we are going to use oil in our battleships. We know a battleship goes out of date very promptly. The thing we are assured of is that we are up against an immediate emergency in this war and we feel it is like keeping the money in the bank for some future need while we fail to take care of the immediate, pressing need.

Senator HUSTING. That may be true, that the life of a battleship is short, but of course this is going to be a continuing policy and it is a new policy, so the presumption is we are just about embarking on a policy that is going to continue for quite a number of years. The evidence shows before this committee to-day that with the normal increase in the consumption of oil that the visible supply of oil, including all the reserve anywhere, will only last 15 years. That, of course, is a very short time in the life of a navy.

Dr. WILBUR. I believe the policy of conservation is quite right and that we have been lavish and reckless in the use of our national products; there is no question about that; but we are in an immediate emergency now. The price of oil will increase, powdered coal will be used and the hydroelectric power developed and the oil be kept for its lubricating uses in the future.

The ACTING CHAIRMAN. What is the pleasure of the committee, to adjourn for lunch and meet again, or adjourn over until a later day?

Senator BRADY. I move that we adjourn until next Wednesday at 11 o'clock a. m.

(Whereupon, at 1.30 o'clock p. m. the committee adjourned until Wednesday, June 20, 1917, at 11 o'clock a. m.)

LEASING OF OIL LANDS

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FEB 18 1919

HEARINGS

BEFORE THE

COMMITTEE ON PUBLIC LANDS
UNITED STATES SENATE

SIXTY-FIFTH CONGRESS

FIRST SESSION

ON

S. 45

A BILL TO ENCOURAGE AND PROMOTE THE MINING OF
COAL, PHOSPHATE, OIL, GAS, POTASSIUM, AND
SODIUM ON THE PUBLIC DOMAIN

JUNE 20, 1917

PART 3

Printed for use of the Committee on Public Lands

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LEASING OF OIL LANDS.

WEDNESDAY, JUNE 20, 1917.

United States Senate,
Committee on Public Lands,
Washington, D. C.

The committee met, pursuant to adjournment, at 11 o'clock a. m., in committee room, Capitol, Senator Key Pittman presiding.

Present: Senators Pittman (acting chairman), Chamberlain, Phelan, Husting, Shafroth, Norris, and Kellogg.

The Acting Chairman. The committee will come to order.

Senator Walsh. Mr. Chairman, I took the liberty to ask Mr. Doheny to attend the session of the committee to-day in order to give the committee the benefit of his acquaintance with the subject that he has investigated. If it is agreeable to the committee, I will interrogate Mr. Doheny concerning the matters that I think ought to be brought to the attention of the committee.

The Acting Chairman. I have no doubt that will be agreeable to the committee.

STATEMENT OF MR. EDWARD L. DOHENY.

Senator Walsh. Mr. Doheny, where do you reside?

Mr. Doheny. Los Angeles, Cal.

Senator Walsh. You are interested in the oil business, are you not?

Mr. Doheny. Yes, sir.

Senator Walsh. Where are the properties in which you are interested?

Mr. Doheny. In California and in Mexico.

Senator Walsh. Are you operating in both places?

Mr. Doheny. Yes, sir.

Senator Walsh. What is the name of your Mexican company?

Mr. Doheny. Our operating companies are the Mexican Petroleum Co. and the Huasteca Petroleum Co.

Senator Walsh. With what companies in California are you associated?

Mr. Doheny. The Pan-American Petroleum & Transport Co., the Doheny Pacific Petroleum Co., the Pan-American Petroleum Investment Co., and the Pan-American Petroleum Co. Those companies have a similarity of names because most of them are subsidiaries of the first-mentioned company.

Senator Walsh. Where are the properties owned by these companies in California?

Mr. Doheny. Some of them are located in the San Joaquin Valley, in what is known as the McKittrick district. Some of the lands are located in Santa Barbara County, in what is known as the Santa Maria district. Some of them are in the Ventura County and the Ogai valleys; some are located in the Simi Valley and some are located in the new district known as the Repetto Hills district.

Senator WALSH. What is the source of your title to the properties operated by you in California?

Mr. DOHENY. Well, most of the lands are held in fee simple. A small portion is leased from owners who own in fee simple.

Senator WALSH. You have heard, perhaps, of the controversy which has existed for some years between the Government and claimants of oil lands in California?

Mr. DOHENY. Yes, sir.

Senator WALSH. Are you interested in that controversy?

Mr. DOHENY. Indirectly, as a citizen of the United States, but directly, no. I was interested at one time, but I am not now, having disposed of my interests.

Senator WALSH. Have you any interest whatever in naval reserves Nos. 1 and 2?

Mr. DOHENY. Not that I know of; no, sir.

Senator WALSH. Are you interested in any lands that, at the present time, are in controversy, as between the Government of the United States and the claimants?

Mr. DOHENY. None of my lands are involved in any controversy with the United States that I know of.

Senator WALSH. Now, about what is the production of the companies with which you are associated in California?

Mr. DOHENY. Approximately 8,000 barrels per day.

Senator WALSH. How much are they producing in Mexico?

Mr. DOHENY. We are producing all that we can move from there. That is a matter that is dependent upon the number of tank steamers we can get; but at present I should say about a million and a half barrels per month, or 50,000 barrels per day. Our potential production is about 300,000 barrels per day.

Senator WALSH. About what proportion of the total exports do you produce?

Mr. DOHENY. According to the last tax report which is levied every two months, we produced and exported 38 per cent of the production from Mexico.

Senator WALSH. What is the total annual production from that Republic?

Mr. DOHENY. The total annual shipments——

Senator WALSH. I mean the shipments.

Mr. DOHENY (continuing). Last year were something over 40,000,000 barrels.

Senator SHAFROTH. What is the total production?

Mr. DOHENY. The production in Mexico can never be more than the shipments because of the storage conditions. The potential production of the oil wells to-day——

Senator SHAFROTH (interposing). But there is some consumed in Mexico. is there not?

Mr. DOHENY. Probably 10,000 barrels a day. It is a comparatively small amount.

Senator WALSH. So, apparently, you could produce more from the wells in Mexico if the transportation facilities were available?

Mr. **Doheny**. The potential production of the Mexican wells is approximately a million barrels a day.

Senator **Walsh**. That is crude oil?

Mr. **Doheny**. Yes, sir.

Senator **Walsh**. Do you do any refining in Mexico?

Mr. **Doheny**. Yes, sir; there is a refining company there, the Mexican Eagle Co., an English company, controlled by Lord Cowdray; and there are the Standard Oil Co. and the Pierce Oil Corporation; then there is refining done by the Huasteca Petroleum Co., which I named a while ago.

Senator **Walsh**. What is lacking in the way of transportation facilities?

Mr. **Doheny**. Both pipe lines and tank steamers.

Senator **Walsh**. You are building quite a number of ships, are you not? Will the situation be relieved when they are completed?

Mr. **Doheny**. Somewhat. The pipe-line facilities are not much in excess of the present tank-steamer capacity.

Senator **Walsh**. Why can't that be extended?

Mr. **Doheny**. That can be provided for, if the people interested have any assurance that their rights will be protected.

Senator **Walsh**. That is to say, the uncertainty that there is now as to governmental matters in Mexico operates to retard development?

Mr. **Doheny**. Yes. The anxiety that the oil men have with regard to whether the present constitution of Mexico is going to be carried out according to the letter retards development.

Senator **Walsh**. Is there not considerable difficulty in getting iron for pipe?

Mr. **Doheny**. That is one of the difficulties that interferes with the development of oil—the getting of oil-well casing. The machinery for drilling and other machinery seems to be easier to get, but not altogether free. The casing, however, seems to be limited in amount and very high in price.

Senator **Walsh**. How extensive would the pipe lines have to be in Mexico in order to extend the production for exportation to, say, a million barrels per day? What kind of investment would it mean in pipe-line facilities?

Mr. **Doheny**: An 8-inch pipe line will take about 30,000 barrels per day, or about 10,000,000 barrels annually, of Mexican oil.

Senator **Walsh**. How far is it carried?

Mr. **Doheny**. The pipe lines are equipped with pumps 14 miles apart. The distance to Tampico Harbor from the center of production is about 90 miles. The distance to Tuxpam is not so great, being about 40 miles, but it is not so advantageously situated, so that if pipe lines were put in they would probably average 70 miles in length. It would take about 900 tons of pipe to build an 8-inch line 70 miles long.

Senator **Walsh**. In round numbers, without endeavoring to give it accurately, about how much of an investment would it require in Mexico to make the production equal to the opportunities offered?

Mr. **Doheny**. About $60,000,000.

Senator **Walsh**. Where do the exports from the Mexican field go, Mr. Doheny?

Mr. **Doheny**. They go largely to the United States. A small part of the Lord Cowdray production goes to England; about one-third of our exports now are going to Chile, to fill California contracts made in South America, and we send a very small amount to Rio de Janeiro and to Bahia in Brazil, the remainder going to the United States. Approximately three-quarters of the oil exported from Mexico goes to the United States.

Senator WALSH. Including the Cowdray production?

Mr. DOHENY: Yes, sir.

Senator WALSH. I thought that went to Great Britain.

Mr. DOHENY. It does indirectly, but not directly.

Senator WALSH. How is that?

Mr. DOHENY. Because the American Government has adopted the specifications of the British Navy, and they won't use any of the Mexican oil. They have discriminated against Mexican oil, so that the Mexican oil comes into the United States, goes into American refineries, loses its identity, and then goes into the general trade. Whether any goes directly to England, without being mixed with other oils, it is difficult to say. It may be that it only displaces American oil. However, the fact remains that in the specifications of our Navy there is a clause which provides that no Mexican oil shall be used.

Senator WALSH. Then, as I understand you, the production of the Mexican fields comes to the United States, is refined here, and is utilized for ordinary industrial use, and an equivalent quantity of oil produced in this country is sent to Great Britain?

Mr. DOHENY. Yes, sir. All the oil goes into a common pool, and the oil that goes abroad is supposed to be purely American oil.

Senator WALSH. About what proportion of the Mexican product that goes to Chile and other South American ports——

Senator NORRIS (interposing). Before you leave that, with Senator Walsh's permission, I would like to ask a question.

Senator WALSH. Certainly.

Senator NORRIS. This arrangement comes about under our Navy specifications?

Mr. DOHENY. Yes, sir.

Senator NORRIS. Do you mean that England has the same specifications? Does England have the same specifications that work against Mexican oil?

Mr. DOHENY. I do not know that; but I think it has.

Senator NORRIS. Do you understand why that should be?

Mr. DOHENY. I understand why perfectly. I went over there two years ago, at the solicitation of English capitalists, to talk about selling oil from Mexico. I found that their specifications were very ingeniously contrived by people who were selling oil from other places. The arrangement was such as to exclude Mexican oil.

The ACTING CHAIRMAN. Does that specification mean the grade of oil?

Mr. DOHENY. No, sir; it distinctly provides, in so many words, that Mexican oil will not be accepted.

Senator NORRIS. Is it not generally understood that Lord Cowdray represents the British Government?

Mr. DOHENY. I do not think so.

Senator NORRIS. It is at least entirely an English concern, is it not?

Mr. DOHENY. Yes; although his company is organized under the laws of Mexico.

Senator NORRIS. And the British Government has specifications the same as our Government that really prohibit the use of Lord Cowdray's oil in the British Navy?

Mr. DOHENY. I do not know that, but I understand he does not sell to the British Navy from Mexico. The British specifications, however, were made before he produced any oil. He has been a producer for only a very short time. The companies that supplied the British Navy before that were either American refining companies or the Dutch Shell or Russian companies.

Senator NORRIS. Can you tell us whether this Mexican oil is inferior to other oils? Is there any reason, so far as the quality of the oil is concerned, for these specifications?

Mr. DOHENY. No, sir.

Senator NORRIS. It is purely an arbitrary affair?

Mr. DOHENY. Yes, sir.

Senator CHAMBERLAIN. Does it not have an effect on the price of oil to the consumer; does it not increase the price of oil?

Mr. DOHENY. Not necessarily, but it decreases the price of oil to the producer.

Senator PHELAN. They can not make direct shipments of oil from Mexico?

Mr. DOHENY. No, sir.

Senator PHELAN. Are there facilities at Tampico for refining oil?

Mr. DOHENY. Yes, sir.

Senator PHELAN. It could be refined there and shipped directly to England?

Mr. DOHENY. Yes, sir.

Senator HUSTING. Is there anything in the specifications of the Navy that specifically excludes Mexican oil?

Mr. DOHENY. I have just said that there was.

Senator HUSTING. In terms?

Mr. DOHENY. I just said so.

Senator HUSTING. I just want to state for the information of the committee that I understand——

Mr. DOHENY (interposing). To question that is to intimate that I lied about it.

Senator HUSTING. No. I think you are begging the question.

Mr. DOHENY. Well, I have just stated that there was.

Senator HUSTING. I want to say that I have been informed by a representative of the Navy that the specifications do not, in terms, exclude Mexican oil. I want to ask whether it is not the fact that the reason Mexican oil is not used in the Navy is that, because of its heavy base, it exudes smoke.

Mr. DOHENY. No; that is not the fact, because the heavy base of the Mexican oil will be found in the Texas oil, the California oil, the Russian oil—in all oils. It can be taken out of the Mexican oil, the same as out of any other kind of oil.

Senator HUSTING. Is that the fact only where it is entirely refined, or can you use a partially refined oil—a partially refined Mexican oil for the Navy?

Mr. DOHENY. Naval fuel oil is a mixture of various distillates that are not very valuable for other purposes. They put those together and make a fuel oil. It is a mixture of odds and ends that does not contain residiuum. For that reason, they can be burned without making smoke, and that is why they use that peculiar oil. However, that kind of oil can be prepared from Mexican oil; it can be prepared from any petroleum, natural petroleum, whether it is light or heavy. It is merely a matter of preparation of the oil.

Senator **Husting**. Is it not a fact that Mexican oil is peculiarly heavy?

Mr. **Doheny**. No, sir. Some of the Mexican oil is heavy, but so, also, is some of the California oil.

Senator **Husting**. Would not that impair its usefulness?

Mr. **Doheny**. Not if the asphaltum is taken out.

Senator **Husting**. Is it not a fact that it does not pay to take it out?

Mr. **Doheny**. People who know the oil business and who might desire to take it out are not permitted to do so.

Senator **Husting**. I wish to state to the committee that it is my understanding from a talk I had that the reason Mexican oil has not been used is that for certain reasons it is not deemed advisable to do so, and it does not pay to use it.

Senator **Phelan**. It is not economical?

Senator **Husting**. Yes, that is one reason; and then there is the question of smoke.

Senator **Phelan**. They seem to countenance the obvious subterfuge of shipping Mexican oils to American ports and reshipping them.

Senator **Husting**. I am merely stating my understanding. I presume that those gentlemen that are more familiar with the subect from the standpoint of the Navy will answer questions of that kind.

Senator **Phelan**. Mr. Doheny, how does this impair your production?

Mr. **Doheny**. It does not impair production at all. We find a ready market for all the oil we want to sell at higher prices than the Government wants to pay us for it.

Senator **Phelan**. You have no complaint to make on that score?

Mr. **Doheny**. Not at all. The information I gave you came from Mr. Bedford, chairman of the committee of which I am a member, and Mr. Daniels, the Secretary of the Navy, has been informed regarding it. I got this information, also, two years ago from Mr. Scott. It may be that I have been misinformed, but I am giving you my authority.

Senator **Walsh**. Will you tell us about shipments to western South American ports?

Mr. **Doheny**. Yes. Since January we have been shipping to those ports a quantity of oil which, when it is delivered, will amount to 4,000,000 barrels. That oil is going at the rate of 500,000 barrels a month. Seven tankers are in service moving the oil from Tampico to Chilean ports. By the way, I might say at this point that these tank steamers carry neither the American nor the British flag, so that they are not available for service in this emergency and they are not owned by the company. They are leased by the Union Oil Co. of California.

Senator **Walsh**. The Union Oil Co. of California had contracts for the delivery of oil in Chile and expected, did it not, to supply these contracts from California fields?

Mr. **Doheny**. Yes, sir.

Senator **Walsh**. But they have been obliged to call upon you to meet the contracts?

Mr. **Doheny**. Yes, sir. We are, therefore, indirectly supplying oil to the South American markets.

Senator **Shafroth**. Is it crude or refined oil?

Mr. **Doheny**. Fuel oil. It is residuum. We take out the gasoline and the residuum we sell for fuel.

Senator **Walsh**. Which is the more expeditious, the route from California to Chile or the route from Tampico to Chile?

Mr. **Doheny**. From Tampico, Mexico, it is several hundred miles shorter, and at the present tank steamers' charter prices it is more economical to move oil from Tampico notwithstanding the canal tolls.

Senator **Phelan**. Than from California?

Mr. **Doheny**. Than from California; yes, sir.

Senator **Phelan**. Because——

Mr. **Doheny** (interposing). Because it is about fifteen hundred miles shorter, and the use of a steamer for that distance amounts to more for the cargo than the canal tolls amount to.

Senator Walsh. I want to direct your attention to the California field. Have you had any occasion recently to investigate the production and consumption and the stocks in California?

Mr. **Doheny**. Yes, sir.

Senator **Walsh**. What was the occasion?

Mr. **Doheny**. I was appointed by Gov. Stephens, of California, as chairman of the committee on oils of the State council of defense, and I was named by Mr. Baruch as a member of the committee dealing with oils connected with the National Council of Defense. In my capacity I undertook to gather as exact statistics as it was possible to get, regarding the production, control, consumption, uses, and manipulation of the California oils. Therefore, I have in my mind a great deal of general information about it. I want, in this connection, to apologize for not bringing with me a copy of the report which I submitted to the committees to which I have referred. I should have brought that with me, and will be glad to file it with you as further evidence of what my investigation amounted to.

Senator **Walsh**. I will ask you, if it is agreeable, to furnish a copy of that.

Mr. **Doheny**. Yes, sir.

Senator **Walsh**. I ask that it be printed in the record.

The **Acting Chairman**. Yes; that may be done.

Senator **Walsh**. Mr. Doheny, what is the present production in California?

Mr. **Doheny**. The present total production in California is between 265,000 and 275,000 barrels of oil per day.

I was going on, Senator Walsh, to recite some general facts which I have in mind.

Senator **Walsh**. Yes; go ahead.

Mr. **Doheny**. The total amount of oil production is approximately 38,000,000 barrels.

Senator **Walsh**. That is annual production?

Mr. **Doheny**. The total amount of oil in storage, I should have said. I want to correct that. The total amount of oil in storage is about 38,000,000 barrels. The best informed men in California expressed the opinion that about 40 per cent of that lies in pipelines, reservoirs, and tanks below the outlets, so that it is not available for use except by the complete emptying of those receptacles. So that the easily available oil of California in storage in excess of the daily production amounts to 22,000,000 or 23,000,000 barrels.

Senator **Norris**. Just how can that be, that such a large quantity can be in storage and yet not available?

Mr. **Doheny**. The storage tanks are usually about 30 feet high and 110 feet in diameter. They hold about 55,000 barrels of oil. The outlet is usually about two feet above the bottom of the tank, and the outlet is placed in that position and at that height so as to leave a certain amount of impure oil in the tank.

Senator **Norris**. This 38,000,000 barrels of oil you have referred to includes that portion that is below the outlets?

Mr. **Doheny**. And the portion that fills the hundreds of miles of pipelines extending all over the State. It includes, also, the portion that is below the outlets in reservoirs and other receptacles that are necessary to contain oil that can not be taken out. They assume that, as I have stated, to be 40 per cent—35 or 40 per cent—that being the per cent which is not available.

Senator **Norris**. In your experience as an oil man, do you think that is a good estimate; 40 per cent not available in these storage tanks, as a rule?

Mr. **Doheny**. I think those men are better able to make an estimate than I am. They are more competent to judge than I am, because they are familiar with the fields. They are men who have lived there. Mr. Stewart, the president of the Union Oil Co.——

Senator **Norris**. Mr. Doheny, I am not questioning their veracity at all. I am simply trying to get at the facts. You know about the storage of oil in other places. You have considerable storage capacity in Mexico, I suppose. Would that be true there, that 40 per cent would be unavailable?

Mr. **Doheny**. That is a very different situation from the storage situation in California. Our storage there is 11,000,000 barrels capacity, owned by one concern. That is operated in a very economic way; the most economic way we can devise. In California, on the other hand, the storage is held by two or three hundred separate companies, Some of them have reservoirs built of cement of peculiar form. Some of them have small tanks, and the proportion of a small tank below the pipe line is greater than that of a large tank, so that whatever proportion we keep in Mexico would not apply to any district where there are a thousand owners.

Senator **Norris**. Are all these outlets in your storage tanks 2 feet above the bottom?

Mr. **Doheny**. Yes, sir; practically.

Senator **Norris**. How long will it be until that residuum below the outlet will become of no value? You will have to remove it in order to form a settling basin for new oil.

Mr. **Doheny**. I do not think we have ever taken any out in Mexico. Our oil down there does not contain a sediment. It is practically pure oil, 100 per cent pure. In California, the oil comes out of loose oil sands, and most of the wells produce sand with the oil. There is anywhere from 2 or 3 per cent up to 35 per cent of sand, and some of that sand remains in suspension for a long time. If they did not have an outlet at the bottom, it would soon choke up.

Senator Norris. They have to clean it out occasionally, do they not?

Mr. Doheny. They do not do it except when they have to, because it is an expensive job to clean it out. In estimating the oil and the sand, they estimate it as so much "B. S.," as they call it, which means bottom sediment.

Senator Kellogg. The amount of oil that would be in the bottom of the tanks would depend upon the length of the pipeline, and a man would have to make a careful estimate, knowing the fields?

Mr. Doheny. Yes, sir.

Senator Kellogg. And no man's judgment without that knowledge would be worth very much?

Mr. Doheny. That is right.

Senator Kellogg. As to the east, the pipelines extending from Oklahoma to New York, for instance, would be an entirely different proposition as compared with those to which you have referred?

Mr. Doheny. Yes, sir.

Senator Kellogg. When the pipelines are once filled, that amount of oil is taken up?

Mr. Doheny. Yes, sir. The larger proportion of the oil is tied up in the pipelines, because the pipelines must be full to repletion always.

Senator Walsh. You were speaking some time ago about the amount in storage.

Mr. Doheny. Yes. The report that was made to me by our statistician is to the effect that about a million, three hundred and fifty thousand barrels of oil per month are consumed in California and by the foreign customers of the oil companies in excess of the production, which would mean that 1,350,000 barrels of oil at the present excess of consumption over production would entirely wipe out the available oil in storage in less than two years, or approximately 18 months.

Senator Walsh. That is California you refer to now?

Mr. Doheny. Yes, sir.

Senator Walsh. Let me inquire of you as to what are the uses that the oil is put to in California; what are the industries that make the chief drain upon the supply of oil?

Mr. Doheny. Now, I am sorry again, that I did not bring with me this data. A large proportion of the oil in California is of such a heavy nature that it is used directly as fuel without refining. The remainder is treated with some kind of a refining process, which extracts all distillates above a gravity of 50°. Still a smaller quantity is refined to its ultimate commercial product. The fuel oil used in the industries of California is the residuum, and the heavy crude, too. It is used in the industries of California, and is shipped to Arizona, Oregon, Washington, Alaska, the Hawaiian Islands, to some of the Central American ports, and to Chile, South Ameirca. The refined oils are used in the industries of California, and a large amount of the refined oils is finding its way to eastern markets. Gasoline by the trainload, and lubricating stock by the train load are being shipped from California to eastern points.

Senator Walsh. Within what time has this been the case?

Mr. Doheny. Within the last year.

Senator WALSH. How is it that this trade has thus developed within recent times?

Mr. DOHENY. The falling off of the production of the Mid-Continent field made the supply of gasoline and lubricating stock inadequate to meet the eastern demands, and the prices of gasoline and lubricating oils went up, so that they naturally drew on the California surplus. Up to two years ago California had a substantial surplus production over consumption. It had had production to the extent that the price of oil was down below a profitable point of production. Then, in the last 18 months the price of oil in California has more than doubled, because of the falling off of the production to which I have referred, and also of the California production, which increased the demand for California oils.

Senator WALSH. Leaving California out of consideration for the present, and speaking for the rest of the country, has the production increased or decreased?

Mr. DOHENY. It has increased within a year, but it fell off for two years prior to that, so that the production now is not equal to what it was three years ago, during the bonanza period of the great Cushing field, when the production was much more than it is at the present time.

Senator WALSH. How about the consumption?

Mr. DOHENY. The consumption is continually increasing. Increase in the consumption is not quite equal to the ratio of the number of automobiles in use, but by considering the number of automobiles in use each year in excess of former years you get an idea of the increased use of lubricants and gasoline, because both are necessary for every motor engine in use.

Senator WALSH. Can you tell us about the stocks in the remainder of the country?

Mr. DOHENY. The stocks are being depleted everywhere throughout the country.

Senator WALSH. It is quite apparent then that the production of oil ought to be stimulated, if it can be?

Mr. DOHENY. There is no doubt but that everybody that has any influence at this time and in this situation ought to encourage development of oil wherever possible. The question where its development should be encouraged depends upon the liklihood of an increase being obtained in those places, for the reason suggested by me in answer to your former question, that oil-well supplies, especially tubing, are very difficult to get; in fact, so difficult to get that tubing should not be used except in places where there is almost a certainty of getting a good return in oil for the use of that tubing. If you think it would throw any light on the subject, I would be willing to give the reasoning on that point that I used with the advisory council.

Senator WALSH. I am sure the committee would be glad to hear that.

Mr. DOHENY. It is a very short statement. It is very probable, however, that you have heard it in better words from other lips; but when asked by Mr. Baruch what regions I thought should be thrown open for development, I answered that I thought any place, no matter to whom it belonged, whether to a private individual, a corporation, or the Government, that would produce oil in the greatest quantity with respect both to the amount of time and money invested. Those should be the first places developed. For instance, in California, I have an immense amount of territory that I have acquired within a year, something like 50,000 acres of land. That land I acquired for oil purposes. I know that I can drill wells in great numbers that will each produce from 5 to 25 barrels per day. I have one area that will produce from 250 barrels a day up per well. I am confining all my work to that particular spot, on the theory that it takes as good a pipe line, as much time and experience, and so on, to drill an oil well from the surface down into the sands that will yield 10 barrels as to drill one that will yield 100 barrels a day. For that reason I am withdrawing, just for the purpose of economic operation, all my development at this time, to land that will give the greatest return for the time and supplies invested. In other words, I want to get, in the shortest possible time, the greatest return from every dollar invested. I think that, in this emergency, if there is any spot in the United States, or any number of spots, whether they belong to a private individual, a corporation, the Standard Oil or other company, that will produce more rapidly than a place that I, for instance, am developing, my attention, or the attention of others, should be called to it, and we should be urged in every way possible to develop the land that will yield the largest amount of oil, considering the amount of time and material used.

I want to say that the use of oil in this emergency is going to be more vital to the interests of this country than any other one thing. The papers are telling about an appropriation of $600,000,000 for aeroplanes. You must bear in mind that you can not move an aeroplane one foot, unless you push it, without gasoline. It takes about 12 or 14 barrels of the average oil to produce one barrel of gasoline. To run 100,000 machines at even 1 gallon per day, considering that they may be idle nine-tenths of the time, will take about 30,000 barrels of oil a day; and that is in addition to what we use now. I am just mentioning this to show why I think that this committee, if it has any power, should require any individual or corporation to put at the service of the Nation any lands that will produce oils more rapidly, and it should stop the use of casing on lands that will produce only a small amount of oil, wherever those lands are, if the fact is known to this committee. I suggest that that power should be used as to these lands because of the peril to the Nation. You have got to have oil. Oil to-day is the essential of this war. You can not move without oil in these days. You need it for the aeroplanes, for the motor trucks, for the submarines, for the boats that chase the submarines, and eventually and finally, you need it for the warships themselves. They all need gasoline; they can not start to work without it. If you start with gasoline, why, that comes out of the crude oil, and that crude oil comes out of the ground; and you necessarily have to have the tubing and casing to put in the ground.

Senator **Norris**. Would it not be well, also, if we could get more oil out of the Mexican fields, where you say the supply is so very great?

Mr. **Doheny**. We can supply not only the present needs, but when the consumption is increased so that the fields of the United States will supply only 50 per cent, we can supply the remainder.

Senator **Norris**. It seems to me that that is a place where we know that, without putting down a well, we could use more tubing.

Mr. **Doheny**. You can get but little more tubing. The pipe lines are not taxed to utmost capacity, because the tank steamers that move the oil have not the capacity of the pipe lines. Our own company, for instance, can not move any more oil than we are now moving. We can put through the pipe lines, by crowding them, 90,000 barrels a day, so that we have available a large quantity of oil when we get the transportation.

Senator **Norris**. What you lack is transportation facilities.

Mr. **Doheny**. That is what the Government lacks. We have provided for enough to move available oil. We are provided with enough to move the full capacity of the pipe lines, but we have turned them over to the Government.

Senator **Walsh**. The purpose of the bill under consideration, Mr. Doheny, is to make available lands belonging to the Government, in the various States, that are oil producing. Does it have your approval?

Mr. **Doheny**. Indeed it does, although I want to say, in qualification, or, rather, in explanation of that statement, that all my individual interests are adverse to the passage of the bill.

Senator **Walsh**. How so?

Mr. **Doheny**. Because I stand to lose for the reason that the more oil lands you open up and the more oil that is produced for the market, the lower the price will be for oil. The price of my oil will be kept more nearly stationary by the development of new and unexpected bonanzas.

Senator **Walsh**. You spoke of the advisability of making available the lands that are most highly productive. You know the situation in California, do you not?

Mr. **Doheny**. Not so well as a great many others, but I am pretty thoroughly acquainted with the California situation.

Senator **Walsh**. What part of the oil fields of California could be made most productive speedily?

Mr. **Doheny**. That is a direct question that I was in hopes would not be asked of me, because I have better evidence on that subject than I really care to give. I do not want to have it appear that I have any particular interest in seeing any particular portion of the country opened up. I do know that there are small land reserves on the eastern edge of the Maricopa district in the western Kern County district, or field, that promise great results from development. I have a piece of land in the midst of it, and if those lands are not developed, I expect to get a maximum pressure on the wells on my lands for many years. So, you see, I am immensely interested in seeing those particular lands are not opened up.

Senator **Walsh**. That is from a pecuniary standpoint?

Mr. **Doheny**. Yes, sir. I have great confidence that the territory known as naval reserve No. 2 will be highly productive of oil.

Senator **Walsh**. Within the reserve area you own a section of land?

Mr. **Doheny**. I own a part of a section of school land—a school section, which the Government does not own.

Senator **Walsh**. 16?

Mr. **Doheny**. A part of 16.

Senator **Walsh**. That went to the State of California?

Mr. DOHENY. Yes, sir.

Senator WALSH. You acquired title from the State of California?

Mr. DOHENY. Yes, sir.

Senator WALSH. That is in the midst of the reserved area?

Mr. DOHENY. Yes, sir.

Senator WALSH. You propose to drill on that school area?

Mr. DOHENY. Naturally.

Senator WALSH. To what extent will that deplete the supply in the adjacent public land?

Mr. DOHENY. Well, whenever I drill a well I hope it will deplete the supply in a large area. In fact, with that belief, the oil producers have a sort of unwritten law that they will withdraw about 300 feet, within which distance they will not drill wells. In a case like this I would naturally drill as many wells as possible where I expected to get the maximum gas pressure, without sharing it with anybody else.

Senator PHELAN. The unwritten law would fail there?

Mr. DOHENY. No, sir; unless the Government chose not to drill on that reserve.

Senator SHAFROTH. It would not apply to a situation of this kind?

Mr. DOHENY. No.

Senator PHELAN. You know, undoubtedly, that the Government lays great store upon the oil in the ground in naval reserve No. 2. You are familiar with the private ownership on that reserve. What do you think of the contention of the Government that it is valuable storage ground for the future needs of the Navy?

Mr. DOHENY. Well, I think any area containing oil that yields under pressure must necessarily yield that pressure to the influence of any well drilled in the same pool of oil in the same undisturbed geological horizon or undisturbed oil-containing formation; unless the area is very great, wells drilled around the outside of it, would relieve the gas pressure, just as a pin prick in the edge of a balloon will relieve the gas from the balloon; and as the pressure is relieved, the oil yield per acre, per well, or per day, will change, because the force of gravity will not overcone the capillary attraction nearly so quickly as the additional influence of the gas pressure, with the gravity force, will overcome it.

I have got to choose my words at random, because I only have them in mind for a moment. Say that a well is drilled into an oil-containing formation. After the gas pressure is relieved a well drilled in the vicinity will not yield oil to the extent that it would yield under other circumstances, for this reason. If the gas pressure is still on, the oil sands surrounding the well are forced into the well by the rush of oil and gas, and under the influence of the gas those sands accumulate in the bottom of the well. They are kept in suspension in the oil and are brought to the surface by the flowing or pumping of the well. In the eastern fields the wells often yield very little oil because of the limited drainage area of the perimeter of the well; hence, they use from 300 to 500 quarts of nitroglycerin to increase the drainage area by crevassing and splitting the rock.

In the loose sands of California the gas forces the sand around the well into the well, creating a chamber at the bottom of every well that is drilled in the loose sands, and that chamber, if the gas pressure is relieved, continues to supply oil in proportion to its drainage area. If the gas pressure is relieved before the well is drilled, the drainage area of the chamber would be the circumference of the well multiplied by the depth or thickness of the oil sands, but as most good wells in California drilled in the loose sands, when the gas pressure has not been disturbed, will yield many thousands of tons of sand, the drainage area is multiplied by a very large figure. An oil-containing formation, without gas pressure, will never yield all its content to wells sparsely distributed. They have got to be drilled close together to get the oil. It will take ten times as many wells to produce the oil from a formation not containing its normal gas pressure as it will from another formation if it retains the normal gas pressure that usually exists in large areas of oil-containing formations. I use the figure 10 because some figure should be used to give an idea of the extraordinary loss. That is a theory founded upon experience that I have had covering a period of a great many years.

Senator **Phelan**. In an area where there are oil wells being operated constantly there are two reasons which militate against holding that area for storage reserve purposes: One is an actual diminution of the oil in the area by reason of pumping by wells lawfully operated, and the second is the loss of gas pressure, which would make it very expensive to operate the wells.

Mr. **Doheny**. Yes, sir; those are two reasons.

Senator **Phelan**. And therefore, in your judgment, the reserve should not be held, in view of all the circumstances, at a time of emergency, or at any other time?

Mr. **Doheny**. Without the last remark I agree with you fully. As to the question qualified by the last remark, I would say it depends upon how long the reserve is going to be held.

Senator **Phelan**. What would be the life of such a reserve under the circumstances?

Mr. **Doheny**. Well, its value would diminish from the beginning of developments close to its perimeter by other parties; it would continue for many years, and the diminution of the gas pressure in the center would depend upon the area. As the diminution would be greatest near the perimeter a very large proportion would be lost in two or three years, and that would continue until the maximum distance had been reached at which the influence of the wells outside of the reservation could affect the district or exhaust the gas. Then, if there were areas within the naval reserve that could be developed, of course that would add still other spots to the area that would be exhausted of its gas pressure, and consequently of its oil value.

Senator **Phelan**. This area in naval reserve No. 2 is well known to be rich in oil, and therefore at this time it should be worked to its capacity?

Mr. **Doheny**. I think, in the present emergency, the Navy needs fuel. There is a place where they can get oil much more rapidly than any other place in California already being drilled. Taking the view of the Navy Department I certainly hope that it will never have another use for this oil that will be as urgent as the one that obtains at the present time, and if I were to pass upon the advisability of the development of that land now, or the development of it at all, I would say that the supreme moment to develop it as quickly as possible has arrived.

Senator **Kellogg**. You have been testifying in that regard solely with relation to naval reserve No. 2?

Mr. **Doheny**. With regard to any naval reserve or any place where oil can be produced within the confines of the United States, and not only in the United States, but in Mexico and in South America.

Senator **Kellogg**. Taking all the Government oil fields that you know of in California, will they not be more or less injuriously affected by the development of private ownership?

Mr. **Doheny**. Undoubtedly.

Senator **Kellogg**. It is your opinion, taking all these fields together, that the Government should develop or provide some means of developing, the Government oil fields?

Mr. **Doheny**. I think, if the Government wants to get the maximum oil value, that the sooner it is done the more certain the Government is to get it.

Senator **Kellogg**. In other words, that the Government is going to lose by letting the lands lie idle?

Mr. **Doheny**. That has been my opinion.

Senator **Kellogg**. The development of the oil fields is limited by capacity to procure pipe and machinery?

Mr. **Doheny**. At the present time; yes, sir.

Senator **Kellogg**. Will private owners bring about a development which will take up all the pipe and machinery which can be procured, even if the Government stays out of the field?

Mr. **Doheny**. I think there is a shortage right now in that respect.

Senator **Kellogg**. Then the total oil production can not be increased by the Government opening up these fields?

Mr. **Doheny**. Yes, sir; because a great deal of pipe is now being used in territory that will not produce one-quarter or one-half as much per well as they will get out of that field.

Senator **Kellogg**. Do you think these oil wells would cease to produce and their places be taken by the Government? How is the Government going to get the machinery and the pipe to develop the fields now, if private owners can not do it?

Mr. **Doheny**. The Government can get its share. If the Government should undertake to develop these fields, it could get its share; it might have some influence by which it could get more than its share; and the Government might have influence enough to divert the pipe of some manufacturers—that is to say, it could get them to make this pipe rather than pipe not so essential. There is a great deal of construction going on of pipe for other purposes not so absolutely essential. Skelp or ingots from which pipe is being made is shipped abroad. If that were devoted to the making of pipe to supply the legitimate demands of oil development, the quantity available could be easily increased by 50 per cent.

Senator **Kellogg**. In other words, the Government can do as it has in the manufacture of ships, munitions, etc.—take prior right on the material from the manufacturer?

Mr. **Doheny**. Yes. If they even suggest to the manufacturers that they have that in mind, I think that will be enough. I understand that the spirit is such that if some one in authority even suggested that they let up on other work which is not so essential it would be done immediately.

Senator KELLOGG. As to the Mexican oil fields, as I understand you, what you lack there is ship transportation, pipe-line transportation, and a good government.

Mr. DOHENY. No; you did not exactly understand me.

Senator KELLOGG. You have got to have more ship transportation?

Mr. DOHENY. We are furnishing that.

Senator KELLOGG. Can you furnish that in unlimited amount?

Mr. DOHENY. Not in unlimited amount, but to a much greater extent than now. We have already made arrangements to do that. We would have to have Government aid in getting additional pipe, but we need to have our anxiety relieved as to the future in Mexico.

Senator KELLOGG. As to shipping, can the Government get the ships?

Mr. DOHENY. Not unless the oil producers can get the ships. The only people getting ships are people expecting to use them in the movement of oil. All oil moved is being moved into a hypothetical pool, from which the Government and the public are served. To take a ship from an oil company and put it into the Government's service does not increase the oil movement one particle.

Senator KELLOGG. Can you get more ships now?

Mr. DOHENY. We are having a large number built.

Senator KELLOGG. You are?

Mr. DOHENY. Yes, sir.

The ACTING CHAIRMAN. You have testified that you think the policy to be adopted by the Government should be the development of the known large supplies of oil?

Mr. DOHENY. Yes, sir.

The ACTING CHAIRMAN. Where are the known large supplies of oil in the United States that could be developed that are not now being developed?

Mr. DOHENY. I can not answer that question specifically. In a general way I know that there are large tracts of land in California that have been withdrawn from development; there are also tracts in Alaska, near Controller Bay; there are large tracts of land there that might possibly be developed so as to supply the Alaskan requirements, which are to-day being supplied by California. The result is this, that they not only withdraw oil from the limited supply in California, but they require the use of tank steamers that ought to be on the east coast.

The ACTING CHAIRMAN. I am not talking about withdrawn areas, or about the possible fields that could be developed. I am speaking of the known fields that can be made now to produce large quantities of oil. Take California, for instance: Is there any area in California capable of a large production of oil?

Mr. DOHENY. Yes, sir.

The ACTING CHAIRMAN. What portion?

Mr. DOHENY. Western Kern County. That could be made to yield a large amount of oil, if it could be developed.

The ACTING CHAIRMAN. Why is it not developed?

Mr. DOHENY. I understand there is a dispute as to the ownership, and the people who claim to own have been enjoined from operating it.

The ACTING CHAIRMAN. Where else?

Mr. DOHENY. I have not specific knowledge about this, but I understand the same thing exists in Wyoming, where there are large areas that could be made to produce oil in considerable quantity.

The ACTING CHAIRMAN. Why is not that being developed?

Mr. DOHENY. I understand that the people who would develop it are enjoined from operating it because their title has been disputed.

The ACTING CHAIRMAN. By individuals or by the Government?

Mr. DOHENY. By the Government.

The ACTING CHAIRMAN. Is that by reason of having areas withdrawn for purposes of the Government?

Mr. DOHENY. Yes, sir.

The ACTING CHAIRMAN. Is this field in California that you might develop anywhere near naval reserve No. 2?

Mr. DOHENY. Yes, sir; but it is not confined to it. As a matter of fact, there is quite a little land in California that has not been withdrawn at all, and that men are afraid to undertake to develop because they think it might be withdrawn before they succeed in getting title to it.

Senator SHAFROTH. That has been the case in a number of instances?

Mr. DOHENY. Yes, sir.

Senator SHAFROTH. Is it not a fact, Mr. Doheny, that often when a man has sunk a well and gotten oil the Government has withdrawn the land around there for miles?

Mr. DOHENY. I have heard so.

The ACTING CHAIRMAN. Are you familiar with naval oil reserve No. 2?

Mr. DOHENY. I have crossed it many times. At one time I was interested in one of the tracts in dispute.

The ACTING CHAIRMAN. You are not now interested?

Mr. DOHENY. No, sir; except that I own land in one of the school sections, in section 16.

The ACTING CHAIRMAN. Are you familiar with the richest portion of the reserve?

Mr. DOHENY. I am familiar with the richest developed portion of it. So much of it is undeveloped that it is hard to tell where the richest portion really is.

The ACTING CHAIRMAN. The oil is found in large quantities under what is termed a dome, is it not?

Mr. DOHENY. Well, I have not exactly subscribed to that theory. I am more of a practical developer than a theorizer as to how oil is found.

The ACTING CHAIRMAN. At the present time, what portion of the naval reserve No. 2 shows the richest supply of oil?

Mr. DOHENY. I am not familiar enough with the reserve to know just what portion does.

The ACTING CHAIRMAN. Do you know the number of wells sunk on naval reserve No. 2?

Mr. DOHENY. No, sir.

The ACTING CHAIRMAN. Do you see that map there in front of you, hanging on the wall?

Mr. DOHENY. Yes, sir.

The ACTING CHAIRMAN. That is a map of naval reserve No. 2.

Mr. DOHENY. Yes sir.

The **Acting Chairman**. The red sections there are patented land to the Southern Pacific Railway Co. That amounts to 15,360 acres. That in blue represents land patented by the United States to others, including sections 16 and 36, I believe, which are patented by the State. The green is clear listed for patent. The yellow indicates the land that will be subject to this leasing bill, and the brown, I believe it is, is Government land, which is unaffected by the leasing bill, I believe, on the ground that there was nothing ever discovered. That is not known oil land. These little spots on the map indicate the oil wells, producing oil wells. The sections that have cross bars across them, being sections 2 and 28 and 32, indicate sections where suits are pending by the Government.

Senator **Norris**. Suits are pending on the Southern Pacific.

The **Acting Chairman**. I am referring to the scope of the leasing bill. The leasing bill only deals with the free land; it does not deal with anything else. It only deals with the yellow on that map. That is the reason we are discussing this leasing bill. Sections 2 and 28 are in litigation. The district court of California has just decided that the Government has no claim on section 2.

Senator **Phelan**. The Federal court?

The **Acting Chairman**. Yes. The Government has no claim on section 2. According to this map there are 350 wells, producing wells. Would you say that the reserve could ever serve the purpose of a permanent reservoir of oil for the Government for use at some future time?

Mr. **Doheny**. It is my opinion that it will not or could not.

The **Acting Chairman**. Why?

Mr. **Doheny**. Because there are a sufficient number of wells on it now to relieve the gas pressure, leaving the wells drilled in the distant future to depend entirely upon the gravity flow of oil for the cleaning out of the sands and the final drilling in of the well itself, as that territory is pretty deep territory, and the wells would have to be drilled much closer together in order to exhaust the oil sands, by reason of the fact that the gas pressure has been relieved and is not there to assist in the flow of the oil. A great deal of the territory would never pay to drill.

Senator **Phelan**. You have more interest in Mexico than in California, you testified?

Mr. **Doheny**. Well, it is a question whether I have or not. I think probably I have not more interest in Mexico, although I have more sentimental interest there. I think I have the largest interest, from a pecuniary standpoint, in the State of California.

Senator **Phelan**. You stated that it would be to your pecuniary advantage that no wells be drilled in California.

Mr. **Doheny**. Yes; from the standpoint that the greater the supply the lower the price. I am now selling oil at 78 cents a barrel, and it would probably go to $1.25 if they do not open new districts.

Senator **Phelan**. You are a member of both committees having this matter in charge appointed by the governor of the State of California, and the advisory council?

Mr. **Doheny**. The committee of which I am chairman did not have instructions to go into the question. The other committee was appointed by the governor, because I was at the head of a committee, and the governor thought that the investigation should be made by impartial men who would not be interested for or against any of the parties to this question.

Senator **Phelan**. That is what I want to get at. You are testifying here in a public capacity. You are giving your best judgment for the Government.

Mr. **Doheny**. I hope I am, sir. I am trying to testify as an American citizen who has the interests of his country at heart, and who is a member of the National Council of Defense.

Senator **Phelan**. The Navy is building oil burners. The Secretary of the Navy is much concerned about the future oil supply, because the oil is better fuel than coal for the Navy. Now, what would be your advice to the Navy Department, if you were asked, as to the opening up of the California fields?

Mr. **Doheny**. My advice would be——

Senator **Phelan**. Speaking in a public capacity, without reference to any private interest. Of course, the Government can commandeer private interests.

Mr. **Doheny**. My advice would be to throw open for development, on the best terms possible to the Government, all probable oil lands in the State of California, and at the same time for the department to use its influence with the administration to afford as much protection and encouragement as possible, and relieve anxiety to as great an extent as possible; also to provide for shipments from Mexico, whether they are English, Dutch, or anything else, because it all goes into a common pot. There are two pots. One is available to the Teutons and one to the allies. The United States and Mexico are the sole source of supply for allies.

Senator **Phelan**. Why should not the Government of the United States open wells on its own account?

Mr. **Doheny**. Apart from the present emergency, I have always been of the opinion that the Government should leave these wells in the hands of people who know how to manipulate them. When they are properly taken care of a great portion of the oil can be saved. Crude oil taken out of the ground deteriorates in value by volatalization, and the part that goes off that way is very valuable. The waste in California has been simply enormous from over production and the necessity for storing millions of barrels of crude oil. The gasoline should be taken off at once, and then the residuum containing lubricants and fuel oil and asphaltum can be stored indefinately without appreciable loss. That is something that can be very well worked out.

Senator **Norris**. On the point of conserving oil, and not letting any of it get away, I want to ask you in regard to your testimony that you gave at the beginning of the session this morning in regard to California oil being used for fuel. Do you mean just as it comes out of the ground?

Mr. **Doheny**. Yes, sir.

Senator **Norris**. How much of it? Has your committee given attention to remedying that situation?

Mr. **Doheny**. That does not need a remedy.

Senator **Norris**. You think that?

Mr. **Doheny**. My report that I have asked to place on file will tell you what proportion is used for fuel as it comes from the ground.

Senator **Norris**. Is that a loss?

Mr. **Doheny**. I am producing, from a certain district that I have opened, an immense amount of oil that is almost as thick as molasses. It is very heavy. The refining of the oil does not produce gasoline or any other valuable properties. It is being used for fuel just as it comes from the ground.

Senator **Norris**. Taking the crude oil that is used for fuel in California, is it all that kind of oil?

Mr. **Doheny**. All that kind of oil.

Senator **Phelan**. Is there not a governmental restraint on that?

Mr. **Doheny**. No.

Senator **Norris**. The president of Stanford University, Dr. Wilbur, was on the stand the other day. He is a member of your committee, as I understand it. He is on the same committee with you?

Mr. **Doheny**. He is a member of the general committee. I do not think he is on the oil committee.

Senator **Norris**. He was of the opinion, although I do not know that he stated it definitely, that there was some oil being used in that way.

Mr. **Doheny**. A small amount, but not an appreciable amount.

Senator **Norris**. Where does the Southern Pacific get its oil?

Mr. **Doheny**. It buys a large proportion and produces a large proportion of it.

Senator **Norris**. Don't you think, as a matter of fact, that there should be some requirement of law in that respect? In other words, the people should not be allowed, if we are having a shortage of oil, to use oil for fuel that can be used for more valuable purposes than fuel?

Mr. **Doheny**. As a matter of fact, the oil business in California is so thoroughly organized, the marketers of oil have the situation so well in hand, that no producer of oil determines what shall be done with his product. He sells it to the marketer, and he sells it to advantage. They know better than anyone how it can be best used, and they are not wasting a single particle of that oil.

Senator **Norris**. Would it be a practical proposition for the Government to store its oil in large quantities for future supply?

Mr. **Doheny**. Yes, sir.

Senator **Norris**. You think it would?

Mr. **Doheny**. In tanks; oh, yes, sir.

Senator **Norris**. Would it not deteriorate?

Mr. **Doheny**. Not if it were topped. The fuel oil would not deteriorate.

Senator **Norris**. It would take an immense amount of tankage?

Mr. **Doheny**. Not so large. It could be a part of the available commercial tanks. The Government would not need to build tanks. It could arrange with tank companies to withdraw that from storage when needed.

Senator **Norris**. Of course, one of the objects of the Navy is to have oil, if it can have it, even though the supply is exhausted. It must have it for naval purposes, as it may mean the difference between victory and defeat whether our Navy burns oil or coal. If it is possible to store it in the ground, that should be done. If it can not be done that way, there should be some other way devised, if possible.

Mr. **Doheny**. It is possible.

Senator **Phelan**. As to Reserve No. 1, there is no private ownership practical. Where there are only one or two wells, the owners are to surrender them to the Government without consideration other than the settlement of the conditions. Is there any objection to reserving oil in No. 1 in this extraordinary emergency?

Mr. **Doheny**. That depends——

Senator **Phelan**. Is it a wise policy for the Navy to follow?

Mr. **Doheny**. If the naval reserve could not be depleted of its oil by drilling around the boundary, then it is wise to save it.

Senator **Norris**. Are you familiar with it?

Mr. **Doheny**. I have been around it.

Senator **Norris**. What do you think of it?

Mr. **Doheny**. I think there is quite a lot of oil there. I do not think anyone has a license to draw a comparison between the reserves.

Senator **Phelan**. There have been wells.

Mr. **Doheny**. Yes, sir.

Senator **Kellogg**. England, France, and the United States can not carry on this war without an adequate supply of gasoline. Can any emergency that may ever arise in this country be greater than the present one, in your opinion?

Mr. **Doheny**. I hope not. I think we should not leave a stone unturned to get the necessary supply. We should all do all that we can in that direction. I want to say that all patriots are not in office; some of them are oil men, and they are perfectly willing to give up what they have to the Government.

Senator **Norris**. Suppose you started an oil well to-day in any of the countries with which you are familiar; how long would it take before you would be getting gasoline from that oil?

Mr. **Doheny**. Starting a single rig, you can not tell.

Senator **Norris**. Well, take something that is practical.

Mr. **Doheny**. If you started a dozen rigs, it is fair to assume that some would go down to a point where the oil sand would yield oil. The time that it takes to dig 2,500 feet is usually three or four months, and the day it comes to the surface, you could get gasoline from it. We are running one well producing about 30,000 barrels, and when it goes into the topping plant, there are about 30 streams of gasoline as big as a man's wrist running out continuously. That is 61½ gravity gasoline. That comes into the United States.

Senator **Kellogg**. Inside of a year could there be vast amounts produced?

Mr. **Doheny**. In six months a substantial amount could be produced. The amount would depend entirely upon the obtaining of pipe, and the facility or the expedition with which pipe could be furnished would have a great deal of influence.

Senator **Walsh**. What are the present trunk line facilities in California?

Mr. **Doheny**. They have a much better and greater capacity than the wells. The trunk lines of California could carry twice the present production of the State.

Senator **Walsh**. So that if these new regions were to be opened up, all the pipe necessary would be that required in sinking wells and making connections?

Mr. **Doheny**. And the building of subsidiary pipe lines to carry oil to the main pipe lines.

Senator **Walsh**. Considering these naval reserves, and taking the center of the reserved area, about how far would it be necessary to carry the oil to the trunk lines?

Mr. **Doheny**. The greatest distance in reserve No. 2 would be less than 10 miles, but I am quite sure the greatest distance any well in that reserve would have to be piped would be 10 miles. In this connection, in order that I may not be criticized with regard to this statement about the trunk lines, I want to say that the pipe lines can be increased by the addition of pumping stations. By putting in extra pumping stations, without adding to the pipe lines they can increase the capacity of the pipe lines, so that I think the statement is conservative that twice the amount now being piped could be pumped through the trunk lines in California.

Senator **Walsh**. Have you made any estimate of the length of time the deposits in California will supply the demand there?

Mr. **Doheny**. No, sir. I have read estimates made by others, however. They do not disquiet me as much as some people are disquieted by the short lifetime which they accredit to these fields.

Senator **Walsh**. You think they will last longer?

Mr. **Doheny**. I think they will last longer, and that we will eventually, in ways that we do not now know about, be able to use oil to much better advantage. We will have a larger percentage of gasoline and we will quit using it for fuel to a large extent.

Senator **Walsh**. You say you will quit using it for fuel?

Mr. **Doheny**. Yes, sir.

Senator **Walsh**. What substitute do you have in mind?

Mr. **Doheny**. Well, we will quit using it for fuel under steam boilers and use it for fuel with some form of internal-combustion engine, where we will get the same unit of power with about one-third of the fuel.

Senator **Kellogg**. Is it not a fact that the railroads are considering going back to the use of coal?

Mr. **Doheny**. Yes, sir; they are considering using coal. Mr. Hodges, vice president and general purchasing agent of the Santa Fe, told me they expected to go back to coal.

Senator **Walsh**. Whenever water power is developed, the demand for oil will be diminished?

Mr. **Doheny**. One way to conserve is the use of the internal-combustion engine. One is located at one of the terminals in California. They expect that engine will be able to carry fuel supply without renewal clear across the continent. That was an engine of the Diesel type. The Diesel motor, together with the electric dynamo, furnish a flexible power that, in my opinion, will eventually take the place of the steam engine, both on warships and on locomotives, and any place where electricity will not be cheaper. Electricity, of course, will be used in some places.

Senator **Walsh**. And the supply of coal is unlimited?

Mr. **Doheny**. Yes; the supply of coal is unlimited.

Senator **Phelan**. You think there would be a one-third saving?

Mr. **Doheny**. Two-thirds saving.

Senator **Phelan**. As against crude oil?

Mr. **Doheny**. I mean that 1 pound of fuel petroleum will produce the same units of power as 3 pounds of fuel used under a steam boiler.

The internal-combustion engine is being built to use practically the same fuel as that used under the steam boiler.

Senator PHELAN. I think you testified that it takes approximately 13 barrels of crude oil to make 1 barrel of aeroplane gasoline?

Mr. DOHENY. Yes, sir.

The ACTING CHAIRMAN. You have testified that you were informed the railroads were going back to the use of coal instead of oil. Is that by reason of the price of oil?

Mr. DOHENY. Yes, sir; and the impossibility of getting it in California.

The ACTING CHAIRMAN. If the fields were opened up to the fullest extent, would that necessity on the part of the railroads be obviated?

Mr. DOHENY. It would be delayed for a long time.

Senator PHELAN. You stated that Claifornia is consuming——

Mr. DOHENY (interposing). It would be delayed until the war was ended.

The ACTING CHAIRMAN. If the Government, through some system, should proceed with the developement of the reserve areas in California, including naval reserve No. 2, would it, in your opinion, reduce the price of gasoline fuel oil for the United States?

Mr. DOHENY. It would keep it from going higher. It would have an influence in keeping it from going higher, although it might not reduce it.

The ACTING CHAIRMAN. Do you think it will go higher?

Mr. DOHENY. I know it will go higher.

Senator KELLOGG. I was going to suggest that it would be a good plan to have an executive session at this time.

Senator WALSH. Mr. Doheny, I wish you would tell the committee to what world source of supply you look for fuel oil for the future?

Mr. DOHENY. The great supply of petroleum for the future is going to come from Central and north South America. Middle America is going to produce the world's oil. The greatest oil reservoirs of the world are located north and south of the Panama Canal, and within a few degrees of latitude of that canal. The character of the deposits is such that even with a smaller area an immensely greater supply of oil is bound to be produced.

Senator WALSH. In what countries?

Mr. DOHENY. Venezuela, United States of Colombia, Ecuador, Peru, Guatemala, and Mexico, and I believe every other State of Central America; but those States I know.

I drilled oil wells in the Peruvian district 23 years ago and only ceased because of the low price of oil in California, caused by the extraordinary development I made there.

Senator WALSH. Have the citizens of any of the foreign countries secured concessions of lands in any of these central South American countries, outside of Mexico?

Mr. DOHENY. Yes, sir. There was an English company operating in Peru when I went there over 23 years ago. That company has operated more or less continuously ever since. Its properties, I think, have lately passed into the hands of the Imperial Oil Co., of Canada. I secured some land and concessions in Peru at that time, which I forfeited later on, because the market that I had intended to move oil to did not justify the development. There are some concessions held by Americans to-day in the United States of Colombia. I made some investigation last year with a view of investing there, and received every encouragement from the Colombian Government. I received assurances that laws would be passed which would make it possible for developments to be made and pipe lines, wagon roads, and other facilities constructed to encourage development, but I felt a little bit too timid to go into the development in a foreign country under existing conditions.

Senator **Walsh**. This bill is framed upon the idea that the Government ought to lease its oil lands, the lessee to pay a royalty for the oil taken out, either in kind or in money. Have you any views you care to express as to the wisdom of that policy?

Mr. **Doheny**. Yes, sir. I think that is a wise policy. I think that there would be no difficulty at all in arranging plans for leasing so that the rights of both parties could be provided for with exactness and without confusion or dissatisfaction. I talked that matter over with the Secretary of the Interior, I think, two or three years ago, when I was still interested in some lands now in controversy. I have talked it over with a great many of the oil men on the coast who are familiar with the leasing of lands from private owners. There does not seem to be any difficulty in devising ways that would take care of the Government's interest, if the Government wanted to do this.

Senator **Walsh**. The bill before us contemplates the execution of leases on tracts not to exceed 2,560 acres; that is, four sections. Have you any idea about the size of tracts that should be leased to single individuals?

Mr. **Doheny**. I have given some thought to that subject, Senator Walsh, and I believe where the lands are located near trunk lines that that is a large enough tract to justify development; but when they are located very distant from trunk lines and pipe lines have to be built, a larger area should be granted.

Senator **Walsh**. I take it, then, your idea is to give discretion to the Secretary of the Interior, or someone else, to make smaller units?

Mr. **Doheny**. I think they should be in multiples of the first unit, whatever that may be. I think, in some cases, it should be twice; in other cases three times. That might be left to the discretion of the Secretary, as a person might have to build 100 miles of pipe line, and in that case he could not go in on four or even eight sections; he would have to have still more. He is really developing a new industrial empire instead of an oil area.

Senator **Phelan**. It is not a business that attracts poor men?

Mr. **Doheny**. No, sir. The poor man can not think of it.

There are probably a dozen wells in Mexico—perhaps twenty—that will produce anywhere from 5,000 to 75,000 barrels per day. The oil is not worth a cent a barrel because the owners of the wells have no pipe lines, wharves, and no tank steamers.

Senator **Walsh**. Don't they make you gentlemen carry it for them?

Mr. **Doheny**. All those who have pipe lines have them running at full capacity. If we carried a barrel for them we would have to keep a barrel of our own oil in our tanks.

Senaror **Norris**. Are those oils in the same vicinity?

Mr. **Doheny**. Yes, sir.

Senator **Norris**. All that is lacking is pipe line facilities?

Mr. DOHENY. Yes, sir.

Senator PHELAN. What has been the practice with regard to making pipe lines public carriers in California?

Mr. DOHENY. So far as I know, there has been no oil run. I think it is a joke, because the oils vary in quality, and you can not do that well, in my opinion.

Senator KELLOGG. What good, then, would this excess do in California to-day?

Mr. DOHENY. They could carry their own oil.

Senator KELLOGG. But the pipe lines now built are privately owned pipe lines?

Mr. DOHENY. Yes, sir.

Senator KELLOGG. There would be no use in the Government opening up these lands. The Government would have to build new lines?

Mr. DOHENY. Assuredly.

Senator KELLOGG. In other words, the fact that there is twice the capacity to-day in California in trunk lines would be of no use whatever in developing these lands in the future.

Mr. DOHENY. Not unless the Government did the great injustice of commandeering these lines.

Senator KELLOGG. Could not an arrangement be made to cover that?

Mr. DOHENY. Probably the oils can be put through in large quantities without mixture.

Senator KELLOGG. Is it not a fact that in some parts of the country they run oil by periods? I mean by that that they run a certain grade a certain length of time and then cut it off and run another grade of oil?

Mr. DOHENY. Yes. That adds to the cost of piping.

Senator KELLOGG. But it does not add as much as an entire new line?

Mr. DOHENY. No.

Senator KELLOGG. If there are pipe lines now running to these oil fields in California where this development is going on, those lines could carry a large amount of oil to-day at a much less cost than new lines could be built?

Mr. DOHENY. I think so.

Senator KELLOGG. And the Government could force them to use them as carriers for the Government also?

Mr. DOHENY. Yes, sir; I think so.

Senator KELLOGG. It would be wise to do that rather than to build new lines?

Mr. DOHENY. Yes, sir; if the Government had a limited quantity of oil.

Senator KELLOGG. Do you think a considerable amount of oil could be carried from the Government fields into the pipe lines already constructed?

Mr. DOHENY. If a proper arrangement were made with the owners.

Senator WALSH. Take the field in reserve No. 2. Is there any material difference between the quality of the oils coming from the different wells?

Mr. DOHENY. That is a very uniform oil.

Senator WALSH. So that it would be easy for all of the producers in that field, would it not, to associate and make use of existing pipe lines?

Mr. DOHENY. There would have to be some adjustment of differences in gravity. That would be on a financial basis. However, that could all be arranged.

Senator KELLOGG. The way they do with the pipe lines in the east or to the east, is this: They run a certain grade of oil a certain length of time; then they run another grade for a certain length of time; they do not mix them.

Mr. DOHENY. Yes, sir.

Senator KELLOGG. And they also, in some lines, run refined oils of different grades, one following the other. They do not mix them.

Mr. DOHENY. The eastern oils are different from the California oils. Our Bakersfield oil is very heavy, 15 gravity. I suppose you can not empty the pipe lines with less than two or three thousand barrels of light oil.

The ACTING CHAIRMAN. I have another question. As a matter of fact, for immediate relief, the Government would have to open up the fields in the immediate vicinity of trunk line pipe lines?

Mr. DOHENY. The Government has a right to build pipe lines as far as it pleases.

The ACTING CHAIRMAN. Unless it wants to build pipe lines as far as it pleases.

Mr. DOHENY. Yes, sir.

Senator PHELAN. There is a great shortage of oil on the Pacific coast. Why can't that be supplied from Tampico?

Mr. DOHENY. In the first place there is not tankage enough. There is not marine transportation to take the oil and to move to the coast what is needed from Mexico.

Senator PHELAN. Needed for Mexico?

Mr. DOHENY. I say, there are not ocean tank steamers available to move the oil required on the west coast of the United States that is available to be sold from Mexican oil wells. There is another thing: The crude oil sells at $2.50 a barrel in New York Harbor, while it sells on the Pacific coast at less than a dollar, so that there is no inducement to send it there.

Senator PHELAN. Then you can afford no relief to the Pacific coast by selling Mexican oil?

Mr. DOHENY. We could sell any quantity of oil to the Government or to Pacific coast concerns who wished to buy oil and would come to Tampico for it, but we could not move it elsewhere, because all our tankage is required to meet our obligations to the Government. We are short over a million and a half barrels this year in our delivery to customers.

Senator SHAFROTH. There is a bill pending here before the committee which provides a system of taking up oil lands. It provides that a person can get a permit from the Interior Department for prospecting on 2,560 acres of land, and it provides that in the event he discovers oil he shall have the privilege of a patent for 640 acres, and the balance surrounding that land which he selects for patent shall be subject to lease. I will ask you if you do not think that bill, or that provision of the bill, would be a great inducement to prospectors to sink wells for the purpose of determining whether oil is in a given place?

Mr. **Doheny**. Yes, sir; it would.

Senator **Shafroth**. The fact of the private ownership of the land, and that he would be entitled to all the receipts from it, would encourage him to use special efforts to develop the land?

Mr. **Doheny**. Undoubtedly.

Senator **Shafroth**. As a matter of fact, even at the present time and under the law at the present time, if the withdrawals were removed, and the prospectors could get out on the public domain like, perhaps, the people in California, they could get a greater development, by reason of private ownership of the land, than they could under any leasing system, could they not?

Mr. **Doheny**. Yes, sir; but the present law, or the law that was in vogue, was inadequate for the oil situation. That is why there are so many disputes to-day. It prevented title being obtained until discovery was made, and the discovery, oftentimes, had to be made 3,000 feet under ground.

Senator **Shafroth**. That is one of the hardships.

Mr. **Doheny**. I think the occupation of the land for the purpose of drilling ought to carry with it the exclusive right to drill until a discovery is made, if possible.

Senator **Shafroth**. As between a straight leasing system by the Government and a proposition to have the permittee select 640 acres of land, which he can own absolutely, there is no question in your mind, is there, but that development would take place more quickly under that system than under a straight leasing system?

Mr. **Doheny**. I think so.

Senator **Shafroth**. Therefore there would be an inducement for him to expend his money in that land?

Mr. **Doheny**. Yes, sir.

Senator **Walsh**. Just a question: Would you think that a prospector would go on diligently under a leasing system?

Mr. **Doheny**. Yes, sir.

Senator **Walsh**. What, then, is your idea, as a matter of policy, with regard to the wisdom of the one plan as distinguished from the other? Do you think the State ought to convey, in fee, its oil lands, or do you think it should provide for the appropriation of them under a leasing system?

Mr. **Doheny**. My thought on that subject would be that known oil areas might be equitably leased by the Government, but that the development of unknown areas should be subject to a law which would give the prospector something in return for the chance that he takes to find oil.

Senator **Walsh**. The bill before you gives him prospecting permits over four sections of land, and then gives him one section, or a quarter of it, as a reward for the discovery.

Mr. **Doheny**. In a probable territory, I think that is very liberal.

Senator **Shafroth**. That is not the provision of your bill, Senator Walsh, is it?

Senator **Walsh**. Yes; I think so.

Senator **Shafroth**. I think not.

Senator **Walsh**. It was intended to be. That was the way it was drawn originally.

Senator **Shafroth**. You will not find it in here. That is the bill which has been introduced by Senator Pittman.

Senator WALSH. Here is section 13 [reading]:

Sec. 13. That upon establishing to the satisfaction of the Secretary of the Interior that valuable deposits of oil or gas have been discovered within the limits of the land embraced in any such permit the permittee shall be entitled to a patent for one-fourth of the land embraced in the prospecting permits, such area to to be seleced by the permittee in compact form and according to the legal subdivisions of the public land surveys if the land be surveyed, are to be surveyed at his expense, in accordance to the laws, rules, and regulations governing the survey of placer mining claims if located upon unsurveyed lands.

Senator SHAFROTH. That is not under the subdivision of oil lands. It is under the subdivision of phosphates.

Senator WALSH. That is under the subdivision of oil and gas.

Senator SHAFROTH. Oh, I see.

Senator WALSH. That is all, Mr. Chairman.

Senator PHELAN. I desire to offer a report and have it incorporated in the record.

The ACTING CHAIRMAN. Are there any questions, or are there any other witnesses who wish to be heard to-day?

Senator WALSH. I do not believe I care to go any further.

Senator PHELAN. I ask that the decisions in the California case be spread on the record.

Senator WALSH. It was suggested that we go into executive session.

The ACTING CHAIRMAN. Without objection the decisions in the California cases will be inserted in the record.

(The report and decisions referred to above is here inserted in full, as follows:)

PRELIMINARY REPORT OF COMMITTEE ON OIL AND OTHER FUELS.

LOS ANGELES, CAL., *April 20, 1917.*

A. C. BEDFORD, Esq.,
Chairman Committee Dealing with Oils,
National Council of Defense, Washington, D. C.

SIR: As a member of your committee on oils and other fuels I submit that I have started investigations for the purpose of making as complete a report as possible, and that the information asked from the various oil producing and refining companies is being furnished with commendable promptness and completeness by all who have as yet responded. It is expected that the more complete and systematic organization of the necessary statistics covering the requirements of your said committee of the California State council of defense will be ready for submission to you in the near future. In the meantime, I am pleased to submit the following:

Exhibit No. 1.—Daily production by counties of crude petroleum in California. Factors of control of California petroleum output with gravity analysis.

Exhibit No. 2.—Statement of location of petroleum stocks as of April 1, 1917. Statement of ownership of California stocks as of April 1, 1917.

Exhibit No. 3.—Floating equipment of the Union Oil Co.

Exhibit No. 4.—Floating equipment of the Standard Oil Co.

Exhibit No. 5.—Floating equipment of the Associated Oil Co.

Exhibit No. 6.—Floating equipment of the General Petroleum Co.

Exhibit No. 7.—A report by Mr. L. C. Reed answering your questions with reference to the refined products from California petroleum.

Yours, respectfully,

E. L. DOHENY, *Chairman.*
FRANK P. FLINT.
WM. SPROULE.

EXHIBIT No. 1.—*Daily production of California crude petroleum.*

County.	Total daily.	Per cent of total.
	Barrels.	
Kern	145,000	58
Fresno	40,000	16
Santa Barbara	14,000	6
Ventura	2,500	
Los Angeles and Orange	48,500	20
Total	250,000	100

NOTE.—The foregoing figures do not include oil produced and used as field fuel.

Factors of control by ownership and purchase of California's petroleum production, with gravity analysis.

Company.	Barrels daily.	Gravity analysis.				
		Under 18 gravity.	Under 20 gravity.	Under 25 gravity.	Above 25 gravity.	Total.
		Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
Standard Oil Co.	83,000	16	16	35	58	33
Union Agency	51,000	32	19	18	9	21
Associated Oil Co.	36,000	23	13	6	12	14
Kern Trading & Oil Co.	26,000	9	4	10	11	10
Amalgamated Oil Co.	7,000	4		5		3
The Shell Co.	16,000		25	17		7
General Petroleum Co.	13,000	6	10	4	4	5
Santa Fe Railway	9,000	5	11	2		3
Miscellaneous	9,000	5	2	3	3	4
Total	250,000	36	9	26	29	100

EXHIBIT No. 2.—*Statement of location of crude petroleum stocks in field and pipe line systems as of Apr. 1, 1917.*

County.	In tanks of producers.	Pipe-line systems.	Grand totals.
	Barrels.	*Barrels.*	*Barrels.*
Kern	1,220,000	17,934,000	19,154,000
Fresno	738,000	1,273,000	2,011,000
Santa Barbara	240,000	425,000	665,000
Ventura	22,000	58,000	80,000
Los Angeles and Orange	182,000	2,888,000	3,070,000
San Francisco Bay terminals		5,500,000	5,500,000
Avila terminals		6,020,000	6,020,000
Trunk line stations		3,205,000	3,205,000
Grand total	2,402,000	37,303,000	39,705,000

NOTE.—These stocks are being depleted at the rate of approximately 1,250,000 barrels monthly, or 44,000 barrels daily.

Factors of control by ownership and purchase of California's crude petroleum stocks as of Apr. 1, 1917.

Company.	At the wells.			Pipe-line systems.	Grand total.
	Own.	Purchased.	Total.		
	Barrels.	*Barrels.*	*Barrels.*	*Barrels.*	*Barrels.*
Standard Oil Co.	121,000	183,000	304,000	21,707,000	22,011,000
Union Agency	985,000	53,000	1,038,000	10,100,000	11,138,000
Associated	118,000	72,000	190,000	1,984,000	2,174,000
Kern Trading & Oil Co.	138,000	7,000	145,000	716,000	861,000
Amalgamated	50,000	7,000	57,000	45,000	102,000
The Shell Co.	91,000		91,000	1,414,000	1,505,000
General Petroleum Co.	52,000	32,000	84,000	1,337,000	1,421,000
Santa Fe Railway	145,000		145,000		145,000
Miscellaneous	348,000		348,000		348,000
Grand total	2,048,000	354,000	2,402,000	37,303,000	39,705,000

NOTE.—These figures are approximate in gross barrels.

Exhibit No. 3.—*Union Oil Co.—Floating equipment.*

Name.	Capacity.	Length.		Breadth.		Depth.		Gross tonnage.	Hull.	Register.
	Barrels.	*Ft.*	*in.*	*Ft.*	*in.*	*Ft.*	*in.*			
S. S. Whittier	10,500	240	0	32	0	17.5	0	1,295	Steel	United States.
Oleum { refined. crude.	6,000 28,000	293	0	52	5	23.5	0	2,998	...do	Do.
Washtenaw	27.500	312	0	42.6	0	24.6	0	2,896	...do	Do.
Lansing	48,000	389	4	47	2	27	6	4,560	...do	Do.
Argyll { refined. crude.	5.800 21,000	320	3	40	7	24	5	2,753	...do	Do.
Coalinga	82,000	471	0	55	0	32	9	7,318	...do	Do.
San Joaquin	72,000	425	5	57	1	33	1	6,987	...do	Norway.
La Habra	72,000	424	8	57	0	33	2	7,021	...do	Do.
Lompoc	65,000	435	3	55	8	33	2	7,270	...do	British.
Los Angeles	79,000	432	11	56	0	33	6	6,876	...do	United States.
Lyman Stewart { refined. crude.	5,800 58,000	408	8	55	5	31	7	6,055	...do	Do.
La Brea	79,000	432	11	56	0	33	6	6,946	...do	Do.
Cordelia	65,000	420	3	54	6	32	4	6,537	...do	British.
Barge Fullerton	16,500	235	0	42	5	19	5	1,554	Wood	United States.
Barge E. M. Phelps	30,000	312	0	45	0	25	6	3,029	Steel	Do.
Barge Santa Paula	8,200	183	1	30	3	16	1	650	Wood	Do.
Barge Simla	22,000	278	2	41	9	27	4	2,261	Iron	Do.
Barge Olinda	4,000	134	9	26	1	14	1	408	Steel	Do.

Barges.	Crude.	Refined.	Barges.	Crude.	Refined.
Barge No. 3, San Francisco[1]			Wade Brown, San Pedro		84
Barge No. 42, San Francisco	1,023		Canadohta, San Pedro[2]		
Wing & Wing, San Francisco		1,057	Seattle, barge	2,500	
Barge C, San Pedro		234	Launch Tiber, Port San Luis[3]		
Barge 1910, San Pedro	785				
Barge 1915, San Pedro	3,593		Grand total	814,576	77,400

[1] No capacity. [2] Tug boat. [3] Work boat.

Exhibit No. 4.—*Fleet of Standard Oil Co.*

COASTWISE AND FOREIGN TRADE.

	Barrels capacity.
S. S. *J. A. Moffet*	65,000
S. S. *Caddo*	65,000
S. S. *Bradford*	65,000
S. S. *Richmond*	65,000
S. S. *El Segundo*	34,000
S. S. *Capt. A. F. Lucas*	40,000
S. S. *Asuncion*	21,000
S. S. *E. L. Drake*	40,000
S. S. *Maverick*	12,000
S. S. *Geo. Loomis*	7,000
S. S. *Atlas*	16,000
Barge *No. 95*	48,000
Barge *No. 93*	28,000
Barge *No. 91*	23,000
Total	529,000

COASTWISE TRADE.

D. G. Schofield	80,000

HARBOR TRADE.

Freight launch *Dispatch*	
Barge *No. 94*	5,500
Barge *No. 1*	4,500
Barge *No. 2*	800
Barge *No. 3*	2,000
Barge *No. 6*	650

	Barrels capacity.
Barge *No. 7*	5,500
Contra Costa [1]	7,500
Barge *Pico* [1]	2,200
Benicia [1]	2,200
Petroleum [1]	400
Barge *No. 2* [1]	1,200
Tugboat *No. 1*	
Total	32,450

RIVER TRADE.

Steamer *No. 3*	1,500
Barge *No. 5*	2,200
Steamer *San Jose*	500
Total	4,200
Grand total	645,650

EXHIBIT No. 5.—*Associated Oil Co.'s fleet.*

Name.	Gross tonnage.	Length.		Breadth.		Depth.		Barrels capacity.	Rig hull.
		Ft.	*In.*	*Ft.*	*In.*	*Ft.*	*In.*		
W. F. Herrin	4,959	400	6	52		30		50,819	Steamer, steel.
J. A. Chanslor	4,938	400	6	52		30		50,819	Do.
W. S. Porter	4,902	400		49	9	30	8	53,035	Do.
F. H. Buck	6,076	408	9	55	6	31	8	65,000	Do.
Coalinga	873	192	9	38		13	6	9,880	Do.
Marion Chilcott	1,737	256	4	38		24	7	16,814	Ship, iron.
Monterey	1,854	300		39		26		19,408	Schooner, iron.
Santiago	979	208		33		21	5	11,130	Do.
Avon	70	81	6	16		5	9	500	Disr., steel.
Navigator	414	147		26		16	9		Tug, steel.
Rover	44	62		14					Tug, wood.
Milton	23	44	6	14	2				Do.
Total	26,851							277,395	

EXHIBIT No. 6.—*Floating equipment of General Petroleum Co.*

At San Pedro:
Steel barge *No. 1*, capacity 3,400 barrels, gasoline propelled.
Wooden barge *No. 6*, capacity 3,000 barrels, steam propelled.
Tug *Lebec*, of 137 horsepower.
At Seattle:
Semidiesel *Nuuana*, 10,000 barrels capacity, 320 horsepower.

Chartered.	Capacity.	Length.		Breadth.	Depth.		Gross tonnage.	Hull.	Register.
		Ft.	*in.*	*Feet.*	*Ft.*	*in.*			
S. S. Belridge	72,000	425	1	57	33	1	7,020	Steel	Norwegian.
S. S. Maricopa	72,000	435	2	57	33	1	6,960	do	Do.
Total	144,000						13,980		

Total capacity, 154,000 barrels.

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[1] Gasoline propelled.

EXHIBIT No. 7.

INDEPENDENT OIL PRODUCERS' AGENCY,
Los Angeles, Cal., *April 17, 1917.*

E. L. DOHENY, *President.*

DEAR SIR: I beg to submit herewith my answers and estimates regarding the questions you submitted to me yesterday:

Question 3. The proportion of the crude oil of the State that is being treated and can be treated to recover lubricants?

Approximately 600,000 barrels of heavy oil per month is now treated, and approximately 110,000 barrels of lubricants per month produced. All oil below 18° Baumé could be worked for lubricants (about 37 per cent of State's production) and should yield at least 20 per cent lubricants of oil treated ($7\frac{4}{10}$ per cent of State's production).

Question 4. The amount and percentage of gasoline produced in the State—monthly? Where consumed?

Monthly gasoline production is about 440,000 barrels consumed on Pacific coast, probably 15,000 barrels per month exported.

Question 5. The amount and character of the different lubricants produced in the State and where they find the market?

Monthly production of lubricating oil is about 110,000 barrels; various grades of spindle, light, medium and heavy motor oils are produced; marketed chiefly on Pacific coast.

Question 6. Quantity of lubricating stock ordinarily carried in storage?

Lubricating stocks difficult to estimate, but believe them to be not over one month's production.

Question 7. Whether lubricants are re-treated after shipped out of the State?

California lubricants shipped to eastern points are usually compounded with eastern oils.

Question 10. What proportion of crude that is used as fuel without treatment?

About 40 per cent of California crude production is used for fuel without treatment.

Questions 12 and 13. Total amount of suitable Diesel fuel produced in the State? Something about the amount of this latter fuel that could be produced with present facilities?

The quantity of suitable Diesel fuel at present produced and consumed is about 100,000 barrels per month. However, this could be easily increased fivefold with present facilities by exercising suitable care in keeping separate the quantity produced and not mixing it with the fuel oil residuum, as at present.

Yours, very truly,

—— ——,
Engineer.

The decision of United States District Judge Bean in the case of United States against North American Oil Consolidated et al., involving 640 acres and being the whole of section 2, is of the utmost importance in considering the present proposed legislation with regard to withdrawn oil lands and the Government's policy in relation thereto. This decision is of particular interest because the land is situated within naval reserve No. 2 and because if this decision is followed it means that the bulk of the land within this reserve, now held by various occupants under location, must be patented to these occupants and the land lost to the Government. This decision means that the Honolulu Oil Co. will win the 2,080 acres which Mr. Secretary Lane decided that it was entitled to and which decision was revoked for the purpose of allowing the Attorney General to bring suit against the company in an attempt to recover the land for the Government. It also means that every acre of land held by location within the naval reserve must be patented except only in those cases where the Government can prove that fraud was used in the location of the land. As Secretary Lane, in the very clear and able decision in the Honolulu case, laid down certain fundamental principles with regard to these claims, and as this opinion is now supported by the very carefully prepared and painstaking opinion of Judge Bean, it would seem almost certain that the Government can in any event only hope to win a comparatively small acreage in this reserve, and as this acreage would be scattered and entirely surrounded by patented land there could be no possibility of its being used for a reserve even if the Government should win every acre of it.

In the course of the opinion the court said:

"To bring an occupant or claimant of oil or gas bearing lands within the provisions of the Pickett Act it is not necessary that he was engaged in actual drilling for oil or gas on a particular tract at the date of withdrawal (U. S. *v.* Grass Creek O. & G. Co., 236 Fed., 481), or necessarily that work was then being performed upon the identical claim upon which discovery must ultimately be made in order to make locations."

* * * * * * *

"I am of the opinion that the oil company was in diligent prosecution of work leading to discovery at the date of the withdrawal within the meaning of the Pickett Act. It was when overtaken by the withdrawal, and for months before had been in occupation of each claim engaged in work necessary and proper in order to effect a discovery thereon, with the then present bona fide purpose of completing such work with all reasonable expedition, and was at the date of the withdrawal doing all that could reasonably and justly be expected of it under the circumstances."

Another case bearing directly upon the right of the Government to recover within the naval reserve, although the case itself was outside the naval reserve, is the case of the United States against The Thirty-two Oil Co., likewise decided by Judge Bean on June 7. This case involved 160 acres of land, and although the Government won the suit on the ground of lack of diligence in the prosecution of development, still the court fully recognizes the correctness of the decision of Secretary Lane in the Honolulu case. During the course of the opinion the judge used the following language:

"It is not necessary that the work being performed at the time of the withdrawal was on the particular tract in question, but before it can be deemed work leading to discovery thereon it must have been such as would reasonably tend to that end and been presently and purposely designed for that purpose."

* * * * * * *

"I have no doubt that work could have been in progress at the date of withdrawal on one of a group of locations or even extraterritorially to any of them which could properly be held to be work leading to discovery on all, such as the building of roads, laying of water lines, establishing camps, assembling material and equipment and the like, if such work directly tended to and was purposely designed for the development of each location with all practical expedition. (Anvil Hy. & Dr. Co. *v.* Code, 182 Fed., 205; U. S. *v.* Ohio Oil, 240 Fed., 996; Smelting Co. *v.* Kemp, 104 U. S., 636; Jackson *v.* Roby, 109 U. S., 440.)"

Still other cases bearing vitally upon the naval reserve and the probability of the Government's recovering were decided by the same judge on the same day. These are the cases involving three quarters of section 28, or 480 acres in all, also located within the naval reserve. In these cases final certificates of purchase had been issued prior to the time when the suit was brought and the court dismissed the suits by the Government on the ground that the issuance of a final certificate constituted an equitable title to the land and the jurisdiction to try the legal title vested solely in the Interior Department until the final certificate was revoked; and these three suits were therefore dismissed. In nearly every case in the naval reserve a final certificate had been issued prior to the filing of the suit. In view of these decisions all these suits must now be dismissed, and unless the Interior Department should now revoke the final certificates the settlement of the controversy must be returned to the Interior Department, where it properly belongs; so that after years of controversy and litigation and the disturbance of titles and ruinous litigation, the Government finally finds itself in the position where it has not yet succeeded in even getting into court.

The Attorney General stated before the Senate Public Lands Committee (p. 345 of hearings on House bill 406) that the Honolulu case was much stronger against the Government than any of the cases on which he had brought suit; and again, on page 348, he stated that the only suits which had been brought were cases where it was clear that the Government's rights had been invaded; and again, on page 12 of his supplemental report for 1915, the Attorney General stated that careful investigation is made in every case and due care is observed to avoid suing anyone who has a valid claim. When we now consider that the very first case in the naval reserve has just been decided squarely against the contention of the Government and enitrely on the merits, and when it is further considered that the Government has lost four cases within the naval reserve, and has not won a single case, and further that the first judgment rendered has been an absolute and unqualified confirmation of Secretary Lane's decision in the Honolulu case, and necessarily means that on the question of diligence at least the Government must lose practically every acre within the naval reserve, it must be apparent that to continue this litigation will accomplish nothing for anyone except the attorneys connected with the litigation and that both the Government and the occupants will be the losers by its continuance.

The sole remaining ground upon which the Government might hope to win any cases is on the ground of fraud in the location, and it is by no means clear that the Government can win any cases at all on this ground. As suggested by Judge Bean, in the case of the United States against Brookshire Oil Co., a case also decided on the 7th of June and covering land outside of the naval reserve, even in case of fraud in the original location, where an innocent purchaser of such location, believing it to be valid, was in possession of the land at the date of the withdrawal and thereafter continued its development with reasonable diligence, it may well be that such innocent person comes directly within the provisions of the Pickett Act, which provides as follows:

"That the rights of any person who at the date of any withdrawal order heretofore or hereafter made is a bona fide occupant or claimant of oil or gas-bearing lands, and who at such date is in diligent prosecution of work leading to discovery of oil or gas, shall not be affected or impaired by such order so long as such occupant or claimant shall continue in diligent prosecution of said work" (36 Stat., 847).

Can there be any question that a person who in good faith and for value and without notice of any fraud purchased a claim, and took possession of such claim prior to the first withdrawal and was engaged at the date of the withdrawal in developing the land—that such a person comes squarely within the terms of the Pickett bill, which provides protection for such persons as were bona fide occupants of the land on the date of the withdrawal?

The total area of land within naval reserve No. 2 against which the Government has charged fraud is 3,680 acres (see Commissioner Tallman's testimony before the joint conference of the Committees on Public Lands on House Bill 406). Of this amount all but 1,200 acres was sold to innocent purchasers for value before the first withdrawal, and on the very date of the withdrawal these innocent purchasers were, following the language of the Pickett bill, bona fide occupants of the land and in diligent prosecution of work leading to discovery. In light of the present decisions, therefore, it seems apparent that the Government, at best, can win only an insignificant area within the naval reserve if, indeed, it wins any land a all.

Naval reserve tabulated.

Total area in naval reserve No. 2		30,080
Divided as follows:		
Patented to Southern Pacific	15,360	
Patented to others	3,520	
Honolulu Oil Co.	2,080	
Land in addition to Honolulu which must be patented following Judge Bean's decision	1,920	
Land where fraud is charged but which at date of withdrawal was claimed by bona fide occupants	2,480	
Land where fraud is charged which at date of withdrawal was in hands of original locators but now in hands of innocent purchasers	1,200	
Lands unclaimed	3,520	
Total	30,080	30,080

The relief bill as proposed by the Interior Department at the last session will, according to these recent decisions, affect, therefore, only the 3,680 acres of land against which the Government has charged fraud; and as final certificates had been issued against all of this land prior to the filing of the suits, all of the present suits which the Government has instituted must be dismissed; the Interior Department must then be induced to set aside its final certificates, and thereafter new suits commenced by the Government. What the result of the litigation with regard to this 3,680 acres of land will be, of course, no one can foresee. It is quite possible that the Government will not be able to show that fraud was practiced in a single case, and even if it should win every case this can only be done after years of litigation, and the lands will be drained of their oil content by surrounding land before the end of the litigation is reached.

In order to secure the immediate development of this land to meet the emergency which exists, the operators must have the assurance that the money expended by them in drilling new wells and in further developing the land will not be confiscated by the Government. The bill as drawn by the Interior Department gives an operator the right to try out his claim for a patent, and if his claim for patent be denied, allows him a preferential lease on the land. This kind of a law is necessary for the reason that under such a law the operator may drill freely, knowing that he will be protected in his investment, for if he loses his right to a patent he will at least hold the land under a lease. In this way, also, if the Government has any rights to this land such rights will be protected through the royalty paid to it.

Senator WALSH. It was desired to have an executive session.

The ACTING CHAIRMAN. We will go into executive session.

Senator WALSH. Mr. Chairman, I understand that Mr. Tallman is here and is ready to testify. I suggest that he be heard at this time.

STATEMENT OF MR. CLAY TALLMAN, COMMISSIONER GENERAL LAND OFFICE.

Senator WALSH. What official position do you hold, Mr. Tallman?

Mr. TALLMAN. Commissioner of the General Land Office.

Senator WALSH. Have you here a map showing the region that has been referred to as Searles Lake?

Mr. TALLMAN. Yes, sir.

Senator WALSH. Where is it?

Mr. TALLMAN. Southern California. I have a map here of California that I will show you first—an index map—to show its location.

Senator WALSH. About what area does it embrace?

Mr. TALLMAN. In the first place, it is situated in about township 25 south and ranges 43 and 44 west, Mount Diablo meridian, about 35 miles from the line of the Southern Pacific Railroad, running from Mojave north into Owens Valley. There is a short line of railroad built over that distance from the point called "Searles" on this line of the Southern Pacific to this place marked on the map as "Borax Flat," which is the lake in question.

Senator WALSH. Is there some depth to the lake?

Mr. TALLMAN. It is a very peculiar structure, Senator. I will go ahead with a very brief general description, with your permission.

Senator WALSH. Yes.

Mr. TALLMAN. And then I have a memorandum here, reduced to writing, which you can put in the record, which will be more accurate than my informal statement.

Senator WALSH. Yes.

Mr. TALLMAN. Searles Lake is not a lake, in the ordinary sense; it is a deposit of minerals in an ancient lake, which probably has no outlet at the present time, and which, as the result of inflow from various sources, and evaporation, has about reached a balance. In wet weather there will be shallow water all over the lake; in dry weather that will dry up; for the most part, Searles Lake consists of what we call the crystal body, which consists of a deposit of combined solids and liquids. The solid part is honeycombed to a depth of probably 60, to, in some places, 80 feet, and all in and around in the interstices of the solids exist the so-called brines. The area of the so-called crystalline body covers about 7,000 acres. Outside of the crystalline body there are two zones, which merge imperceptibly into each other, known as mud flats. This interior crystalline zone extends out into the mud flats, more or less, and gradually merges out toward the outer area of the mineral deposit, until it comes to the surrounding hills. In these surrounding hills are also deposits of minerals, more or less like those in the lake, in solid form. Over this whole lake is a crust; this crust in dry seasons is dry and hard, and in the wet part of the year the water will raise the lake, and the brine will come up and cover it from 4 to 8 inches deep with water and brine, making a sort of marsh of it. This brine is saturated with minerals, carrying all that it will hold, and the solid matter in this crystalline body consists of the minerals that have crystallized out of the brines. Generally speaking, these minerals are four in number—trona or soda ash, borax, potassium salts, and common salt. On top, the common salt predominates very largely. The whole area of this crystalline body, of some 6,000 or 7,000 acres, is covered from 2 to 4 feet deep with a material, over 90 per cent of which is common salt. As you go deeper down into the brines and solids, their proportion changes, the common salt becoming much less, but predominating throughout the whole thing.

Here is a map showing the situation on a larger scale. First, here is a small map; that is, this map covers the same area that this map here covers [indicating]. Now, the area inside of this contour line represents the crystalline body [indicating]; the area between that contour and the next indicates approximately the first mud flat, and that is the second mud flat [indicating]. This area right here [indicating] indicates the land patented a number of years ago to the San Bernardino Borax Co., and is now the property of the Pacific Borax Co.

Senator PHELAN. Is that a part of the lake?

Mr. TALLMAN. It is just on the edge, you will see, of the crystalline body. It is near enough so that they can pump the liquids out.

It is shown by the reports made on this deposit that the liquid matter can be pumped out of the lake, and can probably, to a very large extent, be drained by wells in most any portion of it.

Senator PHELAN. Are there any in operation there now?

Mr. TALLMAN. There are two at present; one by the Pacific Borax Co., in conjunction with other concerns, and one by the California Trona Co., another concern which is claiming all of this ground.

Senator PHELAN. They are both really owned in England, are they not—both of those companies?

Mr. TALLMAN. I think the Pacific Borax Co. is. The evidence in this case rather goes to show that the California Trona Co.—a majority of its stock—is owned abroad. Here is the same map, on a larger scale [indicating]. That shows the patented portion. These figures [indicating] represent drill holes where samples have been taken, that are referred to in the reports that have been made. These squares which you see here [indicating]——

The ACTING CHAIRMAN. The numbered squares?

Mr. TALLMAN. No; not the numbered squares, but the small parallelograms—this and this [indicating] are 20-acre claims of the California Trona Co. They take in substantially all of the crystalline center, and some outside. This red line around here [indicating] indicates the boundary of the area now claimed by the California Trona Co., they having abandoned and relinquished this portion out here [indicating].

Senator WALSH. Beyond the red lines?

Mr. TALLMAN. Yes; beyond the red lines.

Senator PHELAN. Did you say that the testimony shows it is foreign-owned?

Mr. TALLMAN. I will get to that in a moment, Senator, if you will permit. Now, this map, Senator, is a cross section [indicating] as developed by the various borings that have been made in the lake. Now, this is the crystalline portion proper [indicating]; here we have the mud flats, where this crystalline and brine portion comes out under the mud, and here it comes out finally to the solid mud and very little, if any, mineral. The theory is that these minerals have come into this reservoir in solution, and finally the solution became loaded or saturated with the minerals and they began to deposit and it reached the balance that is now preserved.

Mr. KENDRICK. Does it appear that it is a replenishing supply from year to year—the minerals?

Mr. TALLMAN. That is impossible to determine, I think. It may be replenishing, more or less. There are some speculations made in the reports by the experts, as to whether that is being done, but so far the tests do not show sufficient difference to tell whether there is any increase in the deposit or not.

The ACTING CHAIRMAN. It would be a very slow process, in any event?

Mr. TALLMAN. Yes, of course, very slow in any case. Now, continuing a little bit on the mineral content; in the first place, these minerals that are up on the sides are mostly borax and soda. The people were looking for borax and for soda a good many years ago, and they first began to examine this lake with a view to finding borax and soda there—particularly soda ash—and the borax company patented this land up on the side, for those minerals. It is probable that certain people who examined this ascertained that there was potash in these salts as early as 1910, but no official examination was made, nor was it generally known to the public that there was anything else in the crystalline body except soda and borax until about 1912. Since that time detailed examinations have been made of this crystalline body and of the brines.

Senator SHAFROTH. Does the water dry up every year?

Mr. TALLMAN. Practically every year, so that the top crust becomes dried up, but down below is this great underground reservoir of 60 or 80 feet of brine.

Senator SHAFROTH. It is not liquid?

Mr. TALLMAN. The relative proportion of the brine and solid matter down below does not change very much.

Senator PHELAN. Are these claims all in the department now?

Mr. TALLMAN. I will take that up now, Senator.

Senator SHAFROTH. Is that in the body of the lake, where these claims are?

Mr. TALLMAN. This line that you see there goes just up to the edge there [indicating].

Senator SHAFROTH. I see.

Mr. TALLMAN. This line would just about take in this edge right here [indicating]. That is the valuable portion of it.

Senator SHAFROTH. Yes.

Mr. TALLMAN. Well, this came to the attention of the Survey and Agricultural Department, as I say, as early as 1912, in examining the geological conditions of the lake. It came before the Land Office formally first in 1913 and 1914. We had kept track more or less of various things that had been going on out there—a long story of conflicting claims to the lake—but we had nothing before us formally to consider until 1913 and 1914, when a corporation known as the California Trona Co. made three applications for patent, one for 960 acres, one for 160 acres, and one for 80 acres. Those applications are for those little areas marked here in red [indicating], and this line here is the 960-acre application for patent and these two areas are the 160-acre and 80-acre applications, respectively, the latter consisting of four 20-acre claims, and that of one 160-acre claim.

Senator **Walsh**. Those are all placer mining locations?

Mr. **Tallman**. Yes, placer mining locations. The 960-acre claim for patent was adversed by another claimant to this entire area, and the adverse suit has never been finally determined.

Senator **Walsh**. Is it pending?

Mr. **Tallman**. It is pending, I understand, in the supreme court of California. It was tried last year in the superior court of the State, at San Bernardino.

Senator **Walsh**. What is the issue involved in that suit?

Mr. **Tallman**. Conflicting claims and locations by another set of interests, known as the Lee interests.

Senator **Walsh**. Just simply a matter of priority of location?

Mr. **Tallman**. Yes, and discovery.

Senator **Walsh**. Or do they attack the validity of the location?

Mr. **Tallman**. Each attacks the validity of the other, I think, on several grounds. So we had before us for consideration one 160-acre application and one 80-acre application for patent, the 80-acre application consisting of four 20-acre claims.

Now, the California Trona Co. is a California corporation, originally incorporated by a man by the name of Dolbear. Mr. Dolbear located all these claims from time to time, and relocated and relocated it for years, even before he knew there was any potash there. He organized the California Trona Co., which is now claiming all this area, and transferred the properties to it; and, to make the story short, thereafter English interests, known as the Foreign Mines Development Co., loaned money to the California Trona Co. on a contract looking to the development of the property. It loaned various sums, and the California Trona Co. also borrowed money from other parties, as a result of which the California Trona Co. became indebted to the extent of some two hundred thousand dollars to the Foreign Mines Development Co. Following that, the Foreign Mines Development Co. brought suit to recover this indebtedness, and also brought stockholders' suits against the various stockholders, and as a result succeeded in getting all the stock—practically the entire stock, with the exception of a few outstanding shares, of the California Trona Co.—either into the treasury of the California Trona Co. or into the hands of the Foreign Mines Development Co. and its associates; it also caused a receiver to be appointed, in connection with the suit on its trust mortgage. I think that receivership is standing yet. At any rate, as it comes to us, this 160-acre application for patent is based on one of the older locations of Dolbear, whereas these four 20-acre claims are based on subsequent or relocations of the same ground by the receiver, for the use and benefit of the company, he having located this entire area in 20-acre claims. We, therefore, had submitted to us for consideration one 160-acre claim and a group of 20-acre claims.

Following the applications for patent, very extensive investigations were made, as a result of which these facts that I have very briefly outlined appeared, and we directed charges against both of the applications for patent; we directed a charge against both that the deposit was not one subject to location at all under the placer mining law. We directed a charge against both of them that they were foreign-owned, and that the applicants were not citizens of the United States, within the meaning of the mining law, and against this 160-acre claim we directed a charge that the locators were dummy locators.

I should state that following the securing of control of the California Trona Co. by the Foreign Mines Development Co., the Foreign Mines Development Co. and associates caused the incorporation of the American Trona Corporation, a New Jersey corporation, and turned over to the American Trona Corporation all the stock of the California Trona Co. that the Foreign Mines Development Co. had acquired, and took in exchange the stock of the American Trona Company; so that the situation as it presented itself to us was this: We have the legal title to the property standing in the name of the California Trona Corporation, the stock of which is owned by the American Trona Corporation, which, in turn, is owned by various individuals and corporations, mostly foreign. I suggested to counsel for the other side—for the applicants—Mr. Slack, of San Francisco, that perhaps they would be willing to admit a great many of these facts, as they were well known to both sides, and that it might be altogether feasible for the parties to the hearing to stipulate, to a large extent, what the facts were, so that the entire matter could be accurately submitted to the department for consideration on the validity of the charges, both as to questions of law and questions of fact. We succeeded in doing that almost entirely. We have stipulated all about the foreign ownership, all about the different locations that were made, and all about everything that was involved in the charges, save and except the questionof the comparative value of the brines and the solids in the lake. They conceived that that was an important issue in considering whether or not the placer mining law was applicable at all to this peculiar deposit, and on that question some testimony has been taken. The Government has completed its testimony and the other parties have nearly completed theirs.

Senator WALSH. What is the contention of the Government in that respect?

Mr. TALLMAN. The contention of the Government is, as indicated by this charge which was directed, that the title to a brine deposit is not subject to acquirement under the placer mining law.

Senator WALSH. Then, are we to understand that the entire area and this great aggregate of 20-acre tracts is all subject to exactly the same infirmities as those that attach to the two with respect to which patents are applied for?

Mr. TALLMAN. I think so, unless by any chance that adverse suit would bring in for consideration all the claims of the adverse claimants.

Senator WALSH. Now, are any claims whatever made to the areas within the lake and adjacent territory, containing the valuable deposits to a greater or less extent, beyond the area that is indicated by red lines on the map before you?

Mr. TALLMAN. I think not.

Senator WALSH. How does the remainder of that stand?

Mr. TALLMAN. There may be locations out there by other interests. The so-called Lee interests, I think, originally had or claimed locations over practically everything that the California Trona Co. claims.

Senator WALSH. Is the whole area protected by withdrawal?

Mr. TALLMAN. Yes; it was withdrawn February 21, 1913. Of course, the issues in this case depend very largely on conditions at the exact date of the withdrawal, as well as the date of application for patent.

Senator WALSH. If this bill that is now before the committee were passed, is there any area to which it would be applicable, not already claimed?

Mr. TALLMAN. Of the so-called interior zones of the crystalline body, probably not; but it is possible that the claimants to this land, if they had an opportunity to exchange the more or less uncertain title which they have now for some sort of a certain leasehold, would be glad to take advantage of it.

Senator PHELAN. Is a large individual ownership practicable in mining a lake? I mean to say, a man holding 20 acres in the surface of a lake, by diligence could get his share and more than his share.

Mr. TALLMAN. Oh, yes; one 20-acre ownership, theoretically, may take it all, if they have a good title to it. These people up here, the Pacific Borax Co., may be able to take all of it. This brine is admittedly migratory, by all parties who have investigated it.

Senator WALSH. Then, apparently, if the land were not appropriated in some form, this Pacific Borax Co. would, in time, be able to avail itself of practically all the values there are in it?

Mr. TALLMAN. There is that possibility, sir.

Senator PHELAN. If there is a monopoly, why should not the Government take it and operate it?

Mr. TALLMAN. That is a broad question of policy, of course.

Senator SHAFROTH. Is this land under water at certain stages [indicating]?

Mr. TALLMAN. Very slightly.

Senator SHAFROTH. How could the people on the piece, then, practically exhaust the matter? By pumping?

Mr. TALLMAN. Oh, yes.

Senator WALSH. Sink a well.

Mr. TALLMAN. Yes. You understand that all this, indicated by these cross hatches, is liquid and solid mixed [indicating].

Senator SHAFROTH. What is the depth of that?

Mr. TALLMAN. That marks 80 feet right there [indicating].

Senator SHAFROTH. Is that the depth of the lake when filled with water, or——

Mr. TALLMAN. It is filled all the time, up to within 4 inches of the top. There is a crust over the top, and when the water comes in and spring rains occur, it will fill up, so that the water comes up 4 to 8 inches above the surface of this crust.

Senator SHAFROTH. Above the brine, but this crust or brine is 80 feet deep?

Mr. TALLMAN. On the top there is a crust, more or less soft. When you get through that, you come to an area then that is spongy or honeycombed with liquid and solid.

Mr. **Kendrick**. Are any streams flowing into this lake regularly?

Mr. **Tallman**. It is very dry country down there, Senator. Just the ordinary mountain washes around it; no perennial streams.

Senator **Phelan**. What is the production of the company operating now?

Mr. **Tallman**. I am unable to give you the exact figures. They have just started. Their plant is experimental. You understand that the California Trona Co. has put a plant up there; they have built this railroad up to their property, and they have spent altogether, admittedly, over $3,000,000 in experimenting and building of plants and trying to operate this property in other ways. The Trona Railway Co. is another subsidiary of the American Trona Corporation.

Senator **Phelan**. And they did all this before they had a title?

Mr. **Tallman**. They have not got the title yet.

Senator **Phelan**. Have they any assurance?

Mr. **Tallman**. Except the location title of the lands, as they had.

Senator **Walsh**. Would the passage of this bill, in your judgment, Mr. Commissioner, tend to stimulate the production from the region?

Mr. **Tallman**. Oh, undoubtedly, it might, Senator. The manufacture of patash, as I understand it, is restricted to a very few concerns in the United States. The California Trona Co. has been going along with reasonable diligence, building a railroad and making experiments, but the people who own this portion are proceeding along a somewhat different line.

Senator **Walsh**. That is, the Pacific Borax Co.?

Mr. **Tallman**. Yes; they, I think, have been a little more successful in devising a process of separation of these minerals than the other people, but I am not sure about that, and they both admit that they have not a perfect process by a long ways. Now, these minerals—soda, potash, and borax—are all commercial commodities, and the difficulty in working this problem out has been to devise a method that would separate them on an economical commercial basis, and to make a saving, and neither one of them, as I underastand it, is saving all three.

Senator **Walsh**. Where does the Trona Co. get its brines?

Mr. **Tallman**. It has some wells here [indicating]. I do not know whether I have got the place marked here or not. They have a piece of land up here on the side somewhere—I think about here [indicating].

Senator **Walsh**. The tract you now point out is quite remote from this rich central portion.

Mr. **Tallman**. But they run a pipe line out here.

P Senator **Walsh**. Oh.

Senator **Phelan**. Is that company operated by a receiver, did you say?

Mr. **Tallman**. It has a receiver, but it is not the operating company. I think the operations are all conducted probably by the American Trona Corporation.

Senator **Walsh**. This Trona Co. has a pipe line apparently into the very heart of the richest brines.

Mr. **Tallman**. Exactly.

Senator **Phelan**. But the product goes into the hands of a receiver.

Mr. **Tallman**. I do not think it does. I think the operations are all conducted—I do not know about it—but I think they are all conducted by the American Trona Corporation.

Senator **Phelan**. Not having an established title, they are still operating and deriving the benefits of the production which they make?

Mr. **Tallman**. Yes; but there have not been very much benefits, as yet.

Senator **Phelan**. And the San Bernardino Co.——

Mr. **Tallman**. They are operating absolutely independently.

Senator **Phelan**. Have they any connection with the plant at San Pedro, Cal.?

Mr. **Tallman**. The American Trona Co., I understand, owns the plant at San Pedro.

Senator **Phelan**. Are they not refining potash?

Mr. **Tallman**. Oh, yes.

The **Acting Chairman**. Very little, though.

Mr. **Tallman**. Their ultimate plan was, I understand, to put it through a certain process here, and then ship the product to San Pedro for further refining.

Senator **Walsh**. And is the Government allowing that company, notwithstanding the disputed title, to go on and drain the lake?

Mr. **Tallman**. Yes. So far they have not hurt it very much.

Senator **Walsh**. There has been no effort to enjoin the draining of the lake by them?

Mr. **Tallman**. No. We probably could not enjoin the Pacific borax people, and as to the other, they have fully understood the conditions under which they were operating.

Senator **Walsh**. You are of the belief, then, that if an act such as this were passed, that you would be able to effect an arrangement with this company, whose plant is already installed, under which it would take a lease?

Mr. **Tallman**. I have no authority, Senator, to say that as a positive fact, but I think it is within the range of possibility. First, they have there a property estimated, roughly, to be worth a billion dollars, gross, in products that can be taken out of it. Now, just assume that it is anywhere near that——

Senator **Walsh**. They are asserting title to it?

Mr. **Tallman**. Yes; they are asserting title to a very valuable property, and they might very likely continue to assert it as long as there is any chance to hold it.

The **Acting Chairman**. Are there not two reasons for the passage of this bill, irrespective of how the contest may come out: if you win this suit, or if you decide that the Department of the Interior has no title, then you have to have some machinery to operate it, and you are looking to this leasing bill as the best means to operate it? On the other hand, it is possible that all of this litigation could be settled in a very short time by utilizing this bill as a medium of settlement?

Mr. **Tallman**. That is true, to a large extent, but I will say, in addition, that it is my understanding from the various experts whom I have consulted on this matter, that this is, first, a very great deposit of potash; second, that it is the only one in the United States; and, third, that potash is a very great necessity at the present time, both for fertilizer and in the manufacture of explosives; it is a natural monopoly, from its situation and condition and physical character. It seems to me that this ought to be handled, perhaps, on a little different basis from that provided in the general leasing bill. It is a matter that the Government and the people at large are so vitally concerned with that if there are any steps that can be taken to insure the best development of this whole deposit, under conditions which will insure that the product will be sold at a reasonable price to the public and to the consumers, that is very necessary and desirable, it seems to me.

Senator WALSH. What do you say of the policy of conveying it away under the old system in fee?

Mr. TALLMAN. I do not think it would be right. I think it would be a very great mistake.

Senator WALSH. You think that some special provision should be made?

Mr. TALLMAN. Yes; I think so. I think that the Government should be allowed to lease it, probably, if lessees will take it on satisfactory terms; but I think the Government should be entitled to a very much larger degree of supervision than it would in the oil business, or in any other great industry already developed, because it is essentially a monopoly that we are turning over to whoever gets it, and the Government should not lose the right to control such a monopoly as that.

Senator WALSH. Is it your idea that it would be operated as one enterprise, or that various leases would be executed?

Mr. TALLMAN. Well, its physical character indicates the greater practicability of operating it as a unit, because if we attempted to divide this up into separate and independent leases, it might simply be a race between these lessees to see who could get the most out of this lake, and they might resort to very wasteful operations to do that, and it might not be conducive to the best development and the best use. The supply of borax from this lake will, I understand, materially affect the borax market, and the same is more or less true of the soda market. Now, bear in mind, also, that so far all experiments have been along the line of taking these minerals out of the brine, and the work has been directed toward the separation of the minerals that are in solution; but here is a great solid mass of material the percentage proportions of which are substantially the same, and eventually they can use the solids.

Senator WALSH. And I suppose that even the solids in the adjacent territory might eventually be utilized?

Mr. TALLMAN. Yes, though the potassium salts seem to abound in the lake pretty much. The deposits in the adjacent territory are soda and borax, and not potassium chloride.

The ACTING CHAIRMAN. Would you advise that the bill contain a provision with regard to potash that the department or the Secretary of the Interior be permitted to lease that in such size tracts as he saw fit?

Mr. TALLMAN. If it applied to this, yes; but I would think that he would be justified, if he could work out a satisfactory lease with those who can furnish the necessary capital and do the necessary experimental work to develop the best use of the lake, to lease it as a whole.

The **Acting Chairman**. Then there would have to be a distinction drawn between the potash deposits—between those that are liquid and those that are not?

Mr. **Tallman**. Well, there are not many other potash deposits, as far as I am aware, in the country.

Senator **Walsh**. Of course, they may be found.

Mr. **Tallman**. Yes.

The **Acting Chairman**. I am only getting at the quantity now that might be leased, because we have a provision in this bill not to exceed 2,500 acres.

Mr. **Tallman**. Yes.

The **Acting Chairman**. Of course, the acreage proposition was discussed, as you are aware, in this leasing bill backward and forward between the two Houses. Consequently, looking now at the practical problem that confronts us, as legislators, we have got to see something that we can pass. I have in mind that if you should attempt to authorize the Secretary of the Interior to lease as much of this land to one party as he saw fit, we might run up against the same kind of fight that we had before.

Mr. **Tallman**. If the Secretary had authority to lease the whole of it, if he were handling the whole situation, if there were several leases that might be controlled as a unit, he could arrange so that each would get its proportion, so that the same results would be secured, as if it were handled by one lessee.

The **Acting Chairman**. I agree that the same results could be obtained. I think it is obvious that it is a monopoly. I think that is known by the committee, and that is the testimony. It is obvious that in order to have it successfully worked, whether through one lease or a dozen, they have got to work in cooperation in the reduction of these brines and the marketing of the product, and I think there should be a distinction possibly in this bill and others for the purpose of permitting that cooperation between the lessees; and in fact, compelling it, if the Secretary of the Interior saw fit.

Mr. **Tallman**. Yes.

Senator **Phelan**. Has the Secretary of the Interior made any recommendations about controlling or handling it?

Mr. **Tallman**. I do not recall that he has.

Senator **Shafroth**. How many acres are there in this lake?

Mr. **Tallman**. From here over to here [indicating] is about 7,000, and the whole thing is much more than that—about 50 square miles.

Senator **Walsh**. If you can devise any plan applicable to this particular deposit, Mr. Commissioner, which you think will serve the purpose better, than the one provided for in the general bill, will you have the kindness to submit it to the committee?

Mr. **Tallman**. I will be glad to, with the Secretary's approval. I would say one word further, Senator, that this California Trona Co., although doubtless largely foreign owned, has expended a large sum of money in pioneering, and in any legislation you pass, it seems to me, they are entitled to some little consideration. I would not like to say anything about their legal rights, because we have got that to pass on, but when we came to go into this matter, they were very frank and open about it and laid before us all the facts relative to this foreign ownership and the locations, and the whole history of it, and stipulated about it, and the present management of that concern has displayed an attitude which deserves some recognition for the very large expenditure that they have made.

Senator **Walsh.** Then, speaking generally, you would think it might be wise to authorize the Secretary to accord a priority to those who have already occupied any of the lands and caused the development of them?

Mr. **Tallman.** I think it would be justified with this concern, though I do not think it should be anywhere near what I understand they have asked for at one time.

Senator **Phelan.** Mr. Chairman, this is very interesting. There are other witnesses. Could we not adjourn for 20 minutes for lunch?

The **Acting Chairman.** I think we should.

Senator **Walsh.** Senator Husting has indicated to me that he would like to have representatives of the Department of Justice and of the Navy Department heard before the hearings close.

The **Acting Chairman.** Personally, I am going to vote against it, for the simple reason—unless they have something new to say, because we have their evidence. If there is any new matter, or if they want to answer anything, I would be glad to hear it, but, personally, I am going to vote against taking up any more of the time of this committee with a repetition of the same thing. We have a hearing here that was taken before a joint committee, consisting of the representatives of the Committee on Public Lands of the Senate and the Committee on Public Lands of the House, and of the three departments, which took about two weeks time. I have the whole record here.

Senator **Walsh.** Recognizing, Mr. Chairman, how patient the committee has been concerning this bill in the past, I endeavored to confine the testimony that I had to offer to such as related to the immediate present condition.

The **Acting Chairman.** I realize that, and, as one of the committee, I enjoyed hearing it, but I do not see that anything is to be gained by repeating the hearings that we have had, over and over and over again.

Senator **Walsh.** I feel quite sure that the Senator from Wisconsin appreciates that, and that he simply desires to submit anything that these departments may care to offer.

Senator **Phelan.** What is your request, Senator Walsh?

Senator **Husting.** I have not made any request here.

Senator **Phelan.** No; Senator Walsh.

Senator **Husting.** I simply say that the testimony before this committee has rather covered lands in the naval reserve. Here are two great departments of the Government that have taken a very great interest in this naval reserve proposition. The Department of Justice now has an attorney in the West trying lawsuits involving the title to these lands. I think many facts now have been submitted here by testimony, for the purpose of establishing the necessity of opening up the Naval Reserves. Now, as a member of this committee I feel not only that it is fair, but that it is absolutely necessary for these two departments to be given an opportunity to controvert those facts, and to explain them, and to make such showing as they deem advisable; and I can not conceive that this committee, in arriving at the truth, merely wants to hold an ex parte investigation, all going to show that they shall be opened, and nothing to show that they should not be opened. I understand these hearings are for the purpose of arriving at the facts, and inasmuch as they involve a consideration of far-reaching governmental policy, it would seem to me that the hearings would be absolutely useless, if they are going to be confined merely to the facts favoring the proposition of the Senator from Nevada, or a member of the committee, and not to give those who have hitherto at least taken the position that these Naval Reserves should be conserved for the use of the Navy, an opportunity to present the facts.

Now, I do not know just what the Department of Justice or the Department of the Navy wish to submit. All I ask for is an opportunity—and I shall move, of course, if it is necessary—I did not consider a motion necessary, but I shall move that opportunity be given the Department of Justice and the Navy Department, and such other gentlemen as may desire, to appear before the committee and controvert the facts sought to be established by the hearings of the last three sessions.

The ACTING CHAIRMAN. Do you make that motion?

Senator HUSTING. Yes, I make that motion.

The ACTING CHAIRMAN. That motion is made, gentlemen.

Senator WALSH. Mr. Chairman, I believe, in view of the statement made by the Senator from Wisconsin, that he has not consulted with these officers of the Department of Justice and of the Navy Department. He does not know that they have anything to offer, or that they care to be heard, or that there is anything to be said. I think that we might very properly take an adjournment until to-morrow, and if they have anything they want to submit, the Senator can have them here at that time, or can come and tell the committee that they do not care to say anything further; but I am going to ask for expedition about this matter. I have tried to crowd the things along and to get through.

The ACTING CHAIRMAN. The Senator from Wisconsin intimated that, as chairman, I only wanted evidence on one side of this matter adduced. The only testimony that has been introduced by Mr. Doheny or given by Mr. Doheny is purely cumulative, with regard to physical conditions that have been testified to in regard to this Naval Reserve by other witnesses. The record is full of it. The testimony of Mr. Doheny, it is true, was very valuable with regard to this matter, by reason of the position he holds and by reason of his knowledge of the situation, and we were glad to receive it; but I do not think that the Department of Justice, or the Navy Department, or any other department has anything in this matter to refute. He has given his opinion with regard to the oil situation of the country, and I do not think the Navy Department desires to dispute that. There is nothing in Mr. Doheny's testimony here with regard to the title or affecting any lawsuits or any litigation in any way whatever. He knows nothing about the litigation, and has not attempted to testify in regard to litigation.

However, we had a hearing in December on this matter, which lasted here for two weeks, and here is the record of it, in which the Department of Justice and the Navy Department sat here around the table with the Department of the Interior, and we tried to agree on a bill, and we took evidence for two weeks, and here it is, which may be read by any member of this committee. Every phase of this question has been gone into, and then the Department of Justice and the Navy Department were not satisfied with that hearing, and they went before the Navy Department, and there again every phase of this bill and every question was taken up, and they had a hearing there for over a week, and that has been printed and is also subject to examination by the members of this committee. Now, every time we start in to have one of these hearings—and we have had 8 or 10 of them on this bill in the last four years, and they are all printed—we go over the same thing again, and we get into the Senate and the House, and we have the same result every time, and while I have unlimited patience, I am tired of it and I do not intend to sit here and hear the same witnesses testify to the same things at every session of this Congress. I know what they will testify to because I have heard it. If I do not know I can go and read it, because it is all here. If we had introduced at this hearing any new matter with regard to the trial of those cases, or anything with regard to the title of that property that the Navy Department is interested in, or the Department of Justice, I would have said "Yes, bring them here; I want them here," but we have done nothing at all here except to file a decision in this record. That is all that has been done in this matter. It is a decision of a district court and it explains itself, and Mr. Doheny has not given any testimony here that the Department of Justice or the Navy Department would find new. They have put witnesses on in answer to exactly the same kind of testimony, that that reserve was not fit for a permanent oil reserve. That question came up in 1914, when we passed that act permitting leasing in that reserve. The Secretary of the Navy opposed leasing in the reserve in 1914, under the act for temporary leasing, which bill became a law of Congress. He opposed it before the Naval Affairs Committee, and before the Public Lands Committee of the House. He wanted the reserve excluded from the act and they would not do it, and at that time the value of that as a permanent reserve was determined, and evidence was taken, and what Mr. Doheny has testified to here has been but a confirmation of that testimony. It has been nothing new.

Senator PHELAN. I do not like to interrupt the chairman, but since then the country is at war, and since then the courts have decided against the contention of the Department of Justice.

The ACTING CHAIRMAN. In one case.

Senator PHELAN. And perhaps in a spirit of conciliation, I understand they are prepared to yield the point, that it might be well to give them an opportunity to come. They may not want it.

Senator WALSH. It occurs to me that possibly the representatives of the Navy, coming here at this time, with war upon us, and the stocks of gasoline going down every day, and famine threatened in the very near future, and the time having arrived when, as has been said, these reserves are very necessary to become conserved, they might come forward and say, "We want to have these opened now on some just basis."

The ACTING CHAIRMAN. I would be very pleased if the motion were made to request the Secretary of the Navy and the Attorney General to appear before this committee. I would second that motion. I would be very pleased to have them address this committee, and to state what their plans are—delighted; but I say that all I am objecting to is the placing of more cumulative evidence in this record. I offer a motion to amend. I move that this committee invite the Secretary of the Navy and the Attorney General to appear before this committee.

Senator WALSH. On what date?

Senator PHELAN. I accept that as a motion of my own.

Senator HUSTING. I believe my motion is the motion before the committee.

The ACTING CHAIRMAN. That is a substitute.

Senator WALSH. I think you should fix the time. Say, Thursday?

The ACTING CHAIRMAN. How about Thursday morning at 11 o'clock?

Senator SHAFROTH. This is Wednesday.

The ACTING CHAIRMAN. Let us take it Saturday morning at 10 o'clock.

Senator HUSTING. I will accept that amendment.

The ACTING CHAIRMAN. All right.

Senator HUSTING. I just want to say a few words in reply to the Senator. The committee might say that they have heard me on this subject; so have we heard the Senator from Nevada. It is quite natural that when we hold a hearing to consider a bill that when evidence is introduced on one side of the question, evidence should be not only permitted or tolerated, but it should be invited; and when the Senator says that we have gone all over this ground before, then, naturally, I ask why introduce more testimony? And if more testimony is thought advisable, why exclude additional testimony to controvert or to explain or to make a showing alongside of the new stuff that has come in? In other words, why an ex parte hearing of the last hearing on this important bill and exclude all other evidence to meet the evidence introduced here to-day? These former hearings, held back in 1914, are not a part of this hearing, and consequently if the committee thought it necessary to have any hearing at all and to receive any evidence at all it seems to me proper and meet and necessary, in fact, to also have evidence submitted on the other side. In other words, I do not think we should ex parte hearings. I am glad to accept this amendment and have the two Secretaries here, and I am glad it is going to be held Saturday; and I also hope that this committee, in the event that the Secretary of the Navy and the Attorney General desire to present some of the experts who have been working with the department along this line, be given an opportunity before this committee to present the Government's side of this situation.

Senator PHELAN. Are we going to take a recess now?

Senator SHAFROTH. I think we had better adjourn.

The ACTING CHAIRMAN. Yes.

Senator WALSH. Then we had better recess until Saturday morning?

The ACTING CHAIRMAN. Yes; Saturday morning.

Senator PHELAN. There was a suggestion, Mr. Walsh, that we hear Mr. Doheny in executive session.

Senator WALSH. We had better do that immediately. Mr. Commissioner Tallman left with me a statement concerning Searles Lake, and I want that incorporated in the record.

(The statement above referred to appears in full below, as follows:)

EXHIBIT A.

SEARLES LAKE.

In township 25 south, range 43 east, Mount Diablo meridian and vicinity, in San Bernardino and Inyo Counties, in the western part of southern California, is the residual deposit of a prehistoric lake containing crude soda, borax, potash, and common salt both in solid or crystal form and in solution or brine.

This deposit, known as Searles Lake, is the only extensive potash deposit known to exist in the United States and covers an area of about 50 square miles or about 32,000 acres. It is perhaps best described as if divided into 3 areas or zones: The first or inner zone called the central crystal body, a roughly circular area about 12 square miles in extent, being surrounded by two concentric rings or zones, each varying from about ¼ to 2 miles in width, known as the first and second mud belts.

The first zone, the central and most important part of the deposit, consists of a hard porous mass of crystals of saline substances in the form of a crystallized lake bed from 60 to 90 feet in thickness, which, from the surface downward is composed of layers of halite or common salt, hanksite (a combination of sodium sulphate, sodium carbonate and potash), borax, and trona, or crude soda. The surface is common salt over 97 per cent pure, and this top layer of salt varies from 10 to 20 feet in thickness. The lower layers also contain a great deal of halite or salt, but are especially rich in hanksite, borax, and trona, respectively.

Throughout this first zone, immediately at and below the surface of the crystal body, is a saturated brine which permeates the entire crystal mass and occupies from 25 to 40 per cent of the central body which without the brine would contain that percentage of voids. By reason of the extremely porous nature of the crystal body this brine has relatively free movement and may be pumped and drawn from the entire crystal body in much the same manner as if there were no crystals. For the purpose of illustration, this brine may be considered as a body of liquid 12 square miles in extent, about 60 to 90 feet deep, and with 60 to 75 per cent of the liquid displaced by crystals which have been formed from the original lake of brine. This brine is saturated with sodium chloride or common salt, sodium sulphate, sodium carbonate or soda, potassium chloride or potash, and sodium tetraborate or borax, which are also the principal minerals found in the crystal body.

The first mud belt which surrounds this central crystal body is somewhat similar in character but is distinguished therefrom by a large quantity of mud and sand on the surface, and contains lenses or layers of fine black mud occurring at irregular intervals below the surface. The layers of mud thicken while the crystal formation thins or flattens at the outer edges. The crystal formation in this zone is not so pure as in the central body. Wherever it is found in this first mud belt, saturated brine is also found. So far as now known, the valuable potash deposit does not extend very far beyond the limits of this belt.

The second mud belt or outer zone is also covered with mud and sand, and, in places with outcrops or reefs of a solid efflorescence of trona or crude soda along the easterly border and borax along the northerly and northwesterly border. Some crystal material and saturated brine occurs also in this outer belt. There is no distinct line of demarcation between the zones, each merging gradually into the other.

Although evaporation from the surface in this desert region is often as high as 1 inch or more per day during the summer, the level of the brine is never lowered more than 1 to 2 inches beneath the surface of the central crystal body. At this level the incoming waters furnished by the run off of the Searles Lake drainage basin appear to equal or balance the loss by evaporation. The watershed immediately tributary to Searles Lake is approximately 600 square miles in area. Inflowing drainage waters which cover the central crystal body and sometimes also the surface of the first mud belt of Searles Lakes during occasional rain storms occurring in the rainy season in the fall and spring of the year form a brine saturated principally with the common salt found on the surface which remains separate and distinct from the heavier brine beneath. This surface brine soon evaporates leaving the common salt as the exposed or upper crust of the crystal body.

Questions involving the quantity and extent of the inflowing waters, the amount of additional mineral brought down in solution, and the extent to which the crystals would be dissolved or the brine weakened by inflowing waters if the original brine were constantly pumped out, are problematical and have not been determined.

It is known however that the main volume of brine is so completely saturated with the salts of the same character as those making up the entire deposit that it can dissolve nothing of the minerals carried in solution.

It is estimated that a daily removal of 2,000,000 gallons of the brine would draw from the lake approximately one-tenth of an inch per day. The natural evaporation which is held in check at a practically constant level by the inflowing waters from the drainage basin is much larger, varying from one-fourth to one-half inch per day.

The various layers or masses of trona, borax, hanksite, and halite composing the crystal body which were laid down during the process of dessication and crystallization have the following chemical formulæ:

Trona: $Na_2CO_3.NaHCO_3.2H_2O$; a combination of sodium carbonate, sodium bicarbonate and water of crystallization; commonly called crude soda or soda ash.

Borax: $Na_2B_4O_7.10H_2O$; sodium borate with 10 molecules of water; similar to the borax of commerce.

Hanksite: $9Na_2SO_4.2Na_2CO_3.KCl$; a combination of sodium sulphate, sodium carbonate, and potassium chloride or potash.

Halite: $NaCl$; sodium chloride or common salt.

An average of surface solids taken systematically from 18 points on the crystal body shows the following results, which are typical of the character of material found on the surface: Borax, 0.19 per cent; soda, 0.43 per cent; common salt, 97.88 per cent; sodium sulphate, 0.54 per cent; potash, 0.61 per cent.

The surface zone or salt layer, the hanksite zone, and the trona zone occur in uniform deposits throughout the entire area of the crystal body. The borax crystals are found in masses as are the potash crystals where the potash occurs at other places than in the hanksite zone.

Solid samples carefully taken from 5-foot sections of a well drilled with great care through 75 feet of the crystal body show the following range of percentages:

Borax from 0.14 at 10 to 15 feet depth to 24.92 at 70 to 75 feet depth.

Soda from 0.57 at 0 to 5 feet depth to 65.67 at 65 to 70 feet depth.

Common salt from 8.14 at 20 to 25 feet depth to 98.17 at 0 to 5 feet depth.

Sodium sulphate from 0.24 at 5 to 10 feet depth to 72.16 at 20 to 25 feet depth.

Potash 0.24 at 5 to 10 feet depth to 34.35 at 35 to 60 feet depth.

Samples of brine taken at intervals of 5 feet to a depth of 70 feet in the same well, which is situated near the center of the southwest quarter sec. 23, T. 25 S., R. 43 E., are typical of the composition of brine which may be obtained from various points throughout the central crystal body at varying depths and on analysis show the following range of percentages:

Borax from 1.08 at 5 feet depth to 1.64 at 70 feet.

Soda from 2.76 at 5 feet depth to 4.87 at 65 and 70 feet.

Common salt from 15.63 at 65 feet depth to 20.36 at 5 feet.

Sodium sulphate from 3.61 at 5 feet depth to 6.83 at 35 feet.

Potash from 2.83 at 5 feet depth to 5.66 at 60 feet.

Average of a 70-foot column of brine: Borax, 1.54 per cent; soda, 4.49 per cent; common salt, 16.49 per cent; sodium sulphate, 6.33 per cent; and potash, 4.92 per cent. Total, 33.77 per cent.

Analyzed samples of the brine taken systematically from 19 points on the central crystal body which are typical of the character of the brine found at the surface show the following averages: Borax, 1.17 per cent; soda, 3.31 per cent; common salt, 19.23 per cent; sodium sulphate, 3.94 per cent; potash, 3.23 per cent.

Such brine is commercially valuable, but is not as rich in potash, borax, or soda as the brine at lower depth.

The following, based upon the average analyses of the brine, is an estimate of the quantities and values of the minerals contained in an estimated daily output of 2,000,000 gallons of the brine, weighing 10,800 tons:

Commercial borax, 316 tons, at $75	$23,700
Soda ash, 531 tons, at $20	10,620
Potash, 486 tons, at $35 to $40 ($35)	17,010
Sodium sulphate, 725 tons, no market	
Salt, 1,710 tons, no market	
Total	51,330

The foregoing amounts are quantities theoretically obtainable from the brine, but in actual practice the percentage of the minerals recovered depends upon the efficiency of the refining process. However, a daily output of half the above value would amount to over $25,000 per day or more than $7,500,000 per year, with a practically inexhaustible supply.

The above values are New York quotations shortly prior to the European war. Since then potash, 99 per cent pure, has been quoted as high as $500 per ton. It is not likely that any large quantity of potash can be marketed regularly at such a high figure, as the fertilizer trade can not afford to purchase potash for fertilizing purposes at exceptionally high prices. The values of borax and soda have also increased since the beginning of the war.

WITHDRAWALS AND STATUS.

The lands embracing the involved deposit are unsurveyed and were withdrawn from entry and included in potash reserve No. 2 by Executive order of February 21, 1913.

For a number of years dating back beyond the withdrawal there have been various attempts made to locate and develop this deposit, resulting after years of litigation, foreclosure, and stockholders' liability suits in the acquisition by the California Trona Co. of the various claims and locations.

The matter was brought into the Land Office by the filing of three applications for patent by the California Trona Co., totaling 1,200 acres, the first for 960 acres, the second 160 acres, and the third 80 acres.

An adverse suit is pending against the first and so far as known has not been finally decided.

Upon receipt of the applications for patent, investigation of the claims by mineral examiners was directed, and as a result of such examination and report adverse proceedings were instituted against the second application for 160 acres and the third for 80 acres.

In the last-named case the facts on all points except the value of the crystal body as compared to the brine have been stipulated. The testimony for the Government on this point has been taken and the case is awaiting the taking of the testimony for the claimant company.

The charges against this application are:

First. That the form and character of the mineral is not such as to bring it within the mining laws of the United States and that it is therefore not subject to entry or disposal thereunder.

Second, third, and fourth. That the applicant company is not in good faith attempting to secure title to the land for itself, but for nonresident aliens who under the law are not qualified to receive a patent therefor; that the claimant company at the time of withdrawal was not the bona fide owner of the claims involved; and that because of the ownership by aliens of the majority of the stock of the company the claimant company was not qualified to apply for or to receive a patent for the lands in question.

Briefly, the lands were first located by C. E. Dolbear and others in 1905, under his own survey, for the so-called trona reefs which were found to be an extensive deposit of solid sodium carbonate of fairly pure composition. In 1908 Dolbear made relocations on approximately 41,200 acres for himself and others. Dolbear was instrumental in organizing the California Trona Co., to whom he conveyed the locations immediately after its organization. Later the California Trona Co. borrowed money from the Foreign Mines Development Co. (Ltd.), an English corporation, the majority of stock of which company was held by the Consolidated Gold Fields Co. of South Africa (Ltd.), an English corporation. A part of the money which was loaned to the California Trona Co. was secured from the Gold Fields American Development Co. (Ltd.), an English corporation, also a stockholder of the Foreign Mines Development Co. (Ltd.).

Upon failure to pay, foreclosure proceedings were instituted against the California Trona Co. and judgment secured in favor of the Foreign Mines Development Co. (Ltd.) for an amount in excess of $200,000.

The Foreign Mines Development Co. (Ltd.) also instituted stockholders' liability suits and secured judgment against several of the California Trona stockholders, some of whom sold their stock to the Foreign Mines Development Co. (Ltd.), which obtained control of the California Trona Co. No sale of the mortgaged property was ever made under the decree resulting from the foreclosure proceedings. Later, after levying assessments and some litigation, all of the stock of the minority stockholders except six shares was purchased by the corporation, in effect becoming the property of the Foreign Mines Development Co. (Ltd.). On June 27, 1912, the receiver appointed during the foreclosure proceedings made in his own name, for the California Trona Co., the locations upon which application for patent is based. This was the status of the California Trona Co. at the time of withdrawal, February 21, 1913. On June 12, 1913, the American Trona Corporation was organized under the laws of

New Jersey, by three citizens of the United States who were at that time employed in other capacities by the Gold Fields American Development Co. (Ltd.), to which company the Consolidated Gold Fields Co. of South Africa (Ltd.) had transferred the majority of the stock of the Foreign Mines Development Co. (Ltd.).

The Foreign Mines Development Co. (Ltd.) transferred to the American Trona Corporation the stock of the California Trona Co. and other specified property, receiving in return all of the preferred capital stock, amounting to $5,000,000, par value, and $7,497,500 of the $7,500,000 par value of common capital stock of the American Trona Corporation.

In addition to the applications for patent for 1,200 acres, the California Trona Co. also owns 425 20-acre claims covering the central crystal body and 313 20-acre claims covering most of the second and a part of the third zones. Prior to December, 1914, the company owned some 1,329 20-acre claims located on this deposit but has since relinquished to the United States 571 claims, leaving a total area now claimed by the California Trona Co. of 14,760 acres. The central crystal body has an area of about 7,680 acres.

The California Trona Co. did not become aware of the value of the deposit for potash until 1912. Prior to that time its efforts were directed toward the recovery of borax and soda from the solid deposits. The original locations were based upon discoveries in the solids and had no reference to the brines.

The value of the deposit is reported as enormous. It is estimated roughly at from $225,000,000 to $1,000,000,000 gross value. The volume of brine now present in the central body is estimated to amount to more than 300,000,000 tons. The amount which might be drawn off to just balance the estimated inflowing water which in turn would dissolve the solids and form saturated brine, is estimated to be 20,000,000 gallons per day, or 108,625 tons. A recovery from this brine of 4 per cent potassium chloride would make a production of more than 4,000 tons of potash, or an annual production of more than 1,500,000 tons.

Senator **Walsh**. Also, Mr. Chairman, there was submitted, in connection with the testimony of Mr. Requa, a letter from Lieut. Commander Landis, which, in my judgment, ought not to be incorporated in the record, and I ask leave to withdraw it.

The **Acting Chairman**. If there is no objection, that will be withdrawn.

Senator **Husting**. In order to enable the Attorney General and the Secretary of the Navy to be advised of the testimony given here, I would suggest, and, if necessary, move that these proceedings of today and the proceedings on the second day be printed, say, by Thursday and a copy delivered to the Secretary of the Navy and the Attorney General, so that when they come here they may know what has been presented here.

Senator **Walsh**. It would be impossible to do that.

The **Acting Chairman**. Yes; but you can get a proof of it and send it to the Secretary of the Navy and the Attorney General.

The committee will meet next on Saturday at 11 o'clock.

Senator **Phelan**. There are some gentlemen here who desire to testify. Is there any disposition to meet here this afternoon?

Senator **Walsh**. I think I will have to quit now.

Senator **Phelan**. Then, those gentlemen will be here on Saturday?

Senator **Shafroth**. Yes; I think so.

(Whereupon, at 2.15 o'clock p. m., the committee went into executive session, and the next hearing will be held Saturday, June 23, 1917, at 11 o'clock a. m.)

LEASING OF OIL LANDS

HEARINGS

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COMMITTEE ON PUBLIC LANDS
UNITED STATES SENATE

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LEASING OF OIL LANDS

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HEARINGS

BEFORE THE

COMMITTEE ON PUBLIC LANDS
UNITED STATES SENATE

SIXTY-FIFTH CONGRESS
FIRST SESSION

ON

S. 45

A BILL TO ENCOURAGE AND PROMOTE THE MINING OF
COAL, PHOSPHATE, OIL, GAS, POTASSIUM, AND
SODIUM ON THE PUBLIC DOMAIN

JUNE 23, 1917

PART 4

Printed for use of the Committee on Public Lands

WASHINGTON
GOVERNMENT PRINTING OFFICE
1917

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LEASING OF OIL LANDS.

SATURDAY, JUNE 23, 1917.

UNITED STATES SENATE,
COMMITTEE ON PUBLIC LANDS,
Washington, D. C.

The committee met, pursuant to adjournment, at 11 o'clock a. m., in the committee room, Capitol, Senator Key Pittman presiding.

Present: Senators Pittman (acting chairman), Smith, Phelan, Husting, Shafroth, Kendrick, Sterling, Kellogg, and McNary.

The committee resumed the consideration of the bill (S. 45) to encourage and promote the mining of coal, phosphates, gas, potassium, and sodium on the public domain.

The ACTING CHAIRMAN. The committee will come to order.

There is a letter here this morning from the Attorney General, which I will put into the record. I will not read the letter in its entirety. The Attorney General states that he is compelled to leave Washington to-day; that he would be disposed to cancel any other engagement and attend the hearing if there were any matters in the bill of interest to him, but that he has read the bill carefully and does not see that the bill now being considered by the committee affects any matters in which he is interested.

Senator SHAFROTH. I think you had better read it.

The ACTING CHAIRMAN. I will read the letter, if that is the desire of the committee [reading]:

DEPARTMENT OF JUSTICE,
OFFICE OF THE ATTORNEY GENERAL,
Washington, D. C., June 22, 1917.

Hon. HENRY L. MYERS,
Chairman Committee on Public Lands,
United States Senate.

DEAR SENATOR: Yours of the 21st in regard to hearings on S. 45, reached me this morning. You state that the Committee on Public Lands requested you to advise me that hearings were being conducted on this bill and to extend an invitation to me to be present at its next meeting on Saturday, June 23, at 11 o'clock a. m., and you also state that should I care to address the committee at that time on the subject matter of the bill they would be glad to hear me.

I have rather hurriedly gone through the bill, which is "To encourage and promote the mining of coal, phosphate, oil, gas, potassium, and sodium on the public domain," and have observed nothing in its provisions which bears upon any matter with which I have official connection or with which I am specially familiar. I, of course, in a general way know that this administration feels much interest in a conservation and development measure of this character, an interest which I share. I do not observe any provision in the bill concerning which I would care to address the committee or in reference to which it occurs to me I could be of particular help.

Notwithstanding the foregoing, I should appear before the committee in response to your invitation but for the fact that I shall be out of the city to-morrow. If I felt that there was any special necessity for my being with you or that I could be of any material assistance in your deliberations, I would be disposed to cancel my other engagement and attend the hearing. Under the circumstances, however, I trust you will permit me to reply by saying that if the committee wishes to ask me any questions relating to the proposed legislation or feels that I can be at all helpful in their consideration of it and you will so inform me, it will give me pleasure to appear before them at a later date.

I shall return to Washington Monday morning and know of no reason why I should be away from the city during next week.

Cordially, yours,

The ACTING CHAIRMAN. The committee will now hear the Secretary of the Navy.

STATEMENT OF HON. JOSEPHUS DANIELS, SECRETARY OF THE NAVY.

Secretary DANIELS. Mr. Chairman and gentlemen of the committee, the letter I had from Senator Meyers asked me to come up to this committee in connection with Senate bill 45. My response would be exactly that of the Attorney General as to that bill. I have looked it over with some care, and I do not see anything in it that you would wish to ask the Secretary of the Navy about.

The ACTING CHAIRMAN. It is true that the bill in its present form does not, possibly, deal with matters that you are directly interested in, or that the Attorney General is directly interested in; but we were discussing, in the formation of this bill, matters in which you undoubtedly would be interested, and in which the Attorney General would undoubtedly be interested. In other words, we were discussing the advisability of placing in the bill an amendment similar to what is known as the Phelan amendment, or an amendment of that character. Although no amendment has been offered yet, we are still discussing the problems that we were discussing then with regard to this bill. Those are things which do interest the Navy Department.

Secretary DANIELS. My feeling about it now is, as it has always been, that they are two separate and independent measures. If Senate bill 45 is to be considered as here printed, of course, I have no comment to make about it. I hoped, however, it would be considered as a separate bill, and any other matter referring to the naval reserves should come up on its merits. I do not want to be in the position of seeming to suggest to this committee the policy which it should pursue. It has been very embarrassing to me, however, to be put in the attitude of seeming to oppose the leasing bill, which had had the approval, as I understand it, of the commitee and of the Secretary of the Interior, and which has many features that I would heartily favor. As far as this bill No. 45 is concerned, its passage should come up on its merits and the bill should be passed as it is, or as you amend it.

Senator HUSTING. I want to say to the Secretary of the Navy that when this matter came up I suggested the advisability of holding a session or two for the purpose of having those who were opposed to the opening of the naval reserves and to this bill here and to give them opportunity to come here and give their judgment and to give us the facts in regard to this matter. I want to say to you that the records of the testimony taken in these three days will show that most of the testimony relating to the oil lands was in connection with naval reserve No. 2; furthermore, I have been informed that it was intended to put a rider on the bill, or an amendment similar to, if not identical with, the Phelan amendment of last year; and, consequently, I thought you might be interested.

Secretary **Daniels**. Of course, if you are going to consider the Phelan amendment or any amendment looking to the transfer of the naval reserve land, I do wish to be heard and to enter my most solemn protest against putting a provision in any bill, or acting upon that matter, until the litigation is concluded. Most of these claims are in court, and, in my judgment, the proceedings of the court should go on. If the land that was set aside by President Taft was rightly set aside, and if that order which was approved by the Supreme Court of the United States was a valid order, all the men on those lands who entered after the withdrawal are trespassers, and I believe that many of them are holding under dummy entries, which would make them fraudulent claimants, those questions, I think, should be settled in the court. On the other hand, if this land belongs to these individuals, and they have good title, they should have all of the land. The Navy, then, should not have an acre of it. If, however, that land which was set aside by President Taft for the purpose of a naval reserve, was rightly set aside, and the President had a right to make that order, as the Supreme Court held he did, then I hold that every man who entered that land after the first withdrawal entered in defiance of that order, and is a trespasser; and the court is the only body to pass upon that matter.

As I understand it, the bill proposes, or the amendment proposes, to give those lands to people who violated the President's order, and who have no legal right upon the land. That, of course, is a matter to be settled by the court. It is a very serious question, gentlemen, to the Navy.

Before these lands were set aside for a naval reserve, the question came up in the Navy Department whether we should build ships to burn oil or coal. That is a very important matter. If we burn oil, we have a much larger steaming radius, and there are a half dozen very important considerations that the use of oil adds to the efficiency of the fleet. Aside from the matter of cleanliness and the reduction in the crew the use of oil permits, every military consideration in the world demands that we shall burn oil and have oil-burning ships.

Great Britain, which has practically no oil in its own country, compared with what we have, is building oil-burning ships, as are all the great naval countries in the world.

Before this policy was entered upon, we had correspondence with the Secretary of the Interior, and I should like to put into the record a letter to the effect that there was so abundant an oil supply in this country as to justify the building of oil-burning ships. That policy was entered upon after the General Board of the Navy had considered the matter, and after assurances from the Department of the Interior that there was a sufficient supply of oil to make that project successful. Now, if we have not the oil, we must reverse our policy. We must build coal-burning ships, with all the attendant inconveniences that would impose shortening their steaming radius, and in other ways impairing their military efficiency.

Notwithstanding that we are the Nation who have the largest supply of oil, we would have our Navy operate under a handicap which other navies are avoiding—and thus reduce its relative efficiency.

There are now, in California, total proven lands amounting to 80,702 acres, of which 6,520 are in petroleum reserve No. 2.

Senator KELLOGG. How many?

Secretary DANIELS. 6,520. That is what we claim—6,520.

Senator KELLOGG. That is, the Government claims that?

Secretary DANIELS. The Government claims that.

I understand, of course, that at this time the argument is made that the situation in California is a very critical one, and that there is a great need for oil. There is a very great need of oil everywhere. Oil is the basis of conducting the war. You can not run aeroplanes or submarines or destroyers, you can not go to the front without oil. The problem that you have to consider is whether the needs of California for this oil are supreme to the needs for national defense. We have launched, in the last three months, three oil-burning dreadnaughts; we will launch three more in the next few months. We have more than 60 destroyers building, and others are being contracted for daily. All are designed to burn oil exclusively. We have over three score of submarines building—they can burn nothing but oil.

The ACTING CHAIRMAN. Where do you expect to get that oil?

Secretary DANIELS. Where do we expect to get that oil?

The ACTING CHAIRMAN. Yes.

Secretary DANIELS. We would prefer to buy the oil, all that we can get, from foreign countries, if we can, and hold our own supply as long as possible.

The ACTING CHAIRMAN. Whereabouts outside of the United States do you expect to buy it?

Secretary DANIELS. We can get some in Mexico. Great Britain, for instance, has tank steamers operating constantly from Tampico. They are taking oil all the time.

The ACTING CHAIRMAN. They are running to their full capacity, are they not?

Secretary DANIELS. I was going to suggest that before action is taken on this bill a Government commission, probably an industrial trade commission or the Geological Survey, be directed, authorized, or requested to make a survey of all the oil fields possible.

The ACTING CHAIRMAN. Have you that information now?

Secretary DANIELS. I have not. I would like to know, and I think we should know how much there is available. For example, just by accident a gentleman called to see me this morning and told me that his company already controlled 110,000 acres of land. I think it is in Texas. He said they are getting 5,000 barrels of oil a day, and that they could double it and treble it. The reason they do not double it and treble it at this time is that the cost of sinking wells and the cost of pipe lines are so great that they can not make the necessary investment.

The ACTING CHAIRMAN. On that point, Mr. Secretary, I want to call your attention to Mr. Doheny's testimony. I do not want to interrupt you, though.

Secretary DANIELS. I do not think that we are prepared yet to say, unless we have all the evidence before us, or unless your committee already has this evidence, just how this matter is going to come out. The oil-bearing lands in the United States are not being developed to their fullest extent. It is in regard to that point that I think we should have information before we act. I think they should be utilized before we touch this nest egg.

Senator KENDRICK. I would like to ask you, Mr. Secretary, a question about that. It is not your idea to have a bill in regard to leasing lands other than those withdrawn for naval reserves, is it?

Secretary DANIELS. Senator Kendrick, in California the proven, unpatented, withdrawn lands outside of the naval petroleum reserve amount to 15,360 acres. I have no suggestion whatever to make about that land. Whatever land there is in California or any other State, so long as it is not in a naval reserve, would not enter into my calculations, because it would not be for me, as Secretary of the Navy, to make any suggestion about it. I do say, however, that every acre of land in America, whether in private hands or in the public domain, ought to be utilized, ought to be brought out, before this particular land is touched. We are building 200 oil-burning ships.

The ACTING CHAIRMAN. When will you have those ships ready?

Secretary DANIELS. We will have 60 destroyers ready—I really feel like hesitating about saying when.

Senator KELLOGG. It might not be advisable to state that at this time.

Secretary DANIELS. We are building 200 oil-burning ships.

Senator KELLOGG. I should say it might be a serious question to state that at this time.

Secretary DANIELS. If we have not the oil for these ships——

The ACTING CHAIRMAN (interposing). The committee has discussed these problems in the past, and the question of litigation, of course, has been before the committee. Now, in this leasing bill we are attempting to supply oil to the Navy as well as the country. Mr. Doheny was before the committee testifying the other day. You know Mr. Doheny by reputation, of course?

Secretary DANIELS. I know him very well.

The ACTING CHAIRMAN. He owns the largest oil wells in the world. The wells he has in Mexico produce as much as all the wells in California put together. It is a remarkable thing. He was dealing with the oil situation the other day. His testimony led me to believe, or gave me the impression, that the supply of oil is decreasing in proportion to the increased demand; that it is not only a serious question in California, but a serious national question.

So far as the Mexican situation is concerned, he stated that they would not increase their production there by reason of governmental conditions in Mexico; that they had no assurance of the life of their business down there; that the conditions were so terrible down there that there was no substantial title; that even within three days they had been closed down by strikes caused by the I. W. W.; and that he expected or heard that conditions are going to become more serious still. That was the Mexican situation.

So far as the California situation is concerned, he said that their reserves were constantly decreasing—their oil reserves—and he gave it as his opinion to the committee that the only place that you could count on an increased oil production was the known fields. The reason he gave for that was this: That they were having great difficulty in getting rigs, principally tubing, for sinking these wells; that there was a scarcity of it, and that it would be poor policy to even permit the use of that scarce tubing in the sinking of wells in speculative fields, or in fields known to produce very little; that such tubing as they could obtain should be used now in fields where there is the greatest known supply of oil that would give the greatest production. He testified, further, that in California the only vicinity where there is a known field right at the present time capable of a greatly increased production was the field embracing oil reserve No. 2—not only oil reserve No. 2, but the field embracing that. That situation has brought to the attention of the committee the fact that if these oil ships are to be built in the near future, which they will have to be, and the demand is thereby increased, we will have to take into consideration that field.

Secretary **Daniels**. Well, I think, Mr. Chairman, you have got to take everything into consideration. If you take these 6,520 acres of petroleum reserve No. 2, of the proven, unpatented lands in the reserve, and use that up now, it would probably relieve us for a year. However, no one can tell the result of the war. The men who have been studying strategy, both in this country and abroad, have reached the conclusion——

There are some reasons that it might be wise not to state in a public hearing.

Senator **Shafroth**. If you prefer an executive session, we can have one.

Secretary **Daniels**. No. I am not going to get into anything that is very confidential. I think this has a very large bearing on this question.

It is not deemed, at the present time, good strategy to call upon America to send her battleships outside of her own country. Of course, the chances are 9 to 1 that with larger English and French Navies, and with the German Navy held at Kiel, the danger to us will not be so great. If, however, the German Navy should come out of Kiel and attempt to break through, that would have a bearing on the question. I think they would be unable to do so, but that is a point you have to take into consideration. If the Germans should break through, then our fleet is the protection we have. I was talking to Admiral Mayo within the last few days about conditions. We are trying to keep our fleet in perfect condition for any emergency. We want it in perfect condition a year from now, or two years from now, if the war should continue that long; and unless we have oil for these ships, we would be in a very serious condition—not only the Navy, but our armies across the sea.

Now, recognize the condition in the country with regard to oil. I recognize the sacrifice that the people in California have to make, and that, under these conditions, they wish to open this reserve. It is a very natural desire on their part. Perhaps, if I lived in California, my vision would be limited by California. Of course, environment has some effect upon the views of all of us.

Senator **Sterling**. I think, Mr. Secretary, the thought has been with many members of the committee—I know it has been mine—that the utilization of the California fields was essential to our national security and defense. That was the idea.

Secretary DANIELS. I feel that its preservation is essential for the ultimate national defense. If you use it this year—it will be drilled up in about a year if thrown wide open, and then it will be gone—the Navy will have nothing to fall back upon. For a long time there has been great agitation in this country to open this reserve. It was set aside for such a time as we could not foresee. Of course, the people in California, and many able lawyers, said the President had no right to set it aside. I think Mr. Taft said it was a matter to be judicially determined, and that much might be said on either side. The courts, however, held that he did have the right, and it was set aside. Now, the national policy has been settled. Shall we unsettle it? Shall we unsettle it even for an emergency which I do not wish to minimize?

Senator SHAFROTH. Don't you think some consideration ought to be given to the fact that there are wells now draining this very basin, probably 100 wells in that very location?

Secretary DANIELS. Certainly.

Senator SHAFROTH. Three hundred wells drain that basin. If that is true, will it not result in the basin being drained without the Navy getting the benefit of it?

Secretary DANIELS. Last spring, when that matter came up, I expressed, in a letter to the Attorney General, dated February 22, a perfect willingness that in the wells already opened, operation should be continued, and that they should be leased.

The ACTING CHAIRMAN. On condition that they surrender claim of title?

Secretary DANIELS. Oh, yes. Moreover, gentlmen. if the exigencies of the country demand that this naval reserve be opened, then I urge you to take no action that will give the opening of these lands to the men there, some of whom have no title under God's sun that will stand in the courts of law. Some of them hold dummy entries. If you will read the evidence in recent cases you will find that there are dummies who entered these lands in defiance of law with no rights whatever. This is all in litigation, and wherever the judge elects and thinks it necessary, he orders a receiver to continue taking the oil, which oil is either sold or impounded. Whatever you do, gentlemen, if this land is to be opened during this great national emergency, I insist that it be opened by the Government, the courts or an agency of the Government, and not by men who hold their titles by fraud.

Senator KELLOGG. Would it interrupt you if I asked you a question?

Secretary DANIELS. No, sir.

Senator KELLOGG. Let us take this question of emergency. Suppose, for the next year or two years, or whatever time the war may last, the necessity for the production of oil in this country is very great, don't you think that we should produce all the oil we can in this country and in Mexico? I am now discussing it without reference to any reservation.

Secretary DANIELS. It is a very great necessity.

Senator KELLOGG. I am a new man and am not familiar with the preliminary hearings with respect to this question. I have been told, however, and I have heard that there is a very grave danger of the destruction or curtailment of the production of Mexico. I suppose if Mexico were curtailed or stopped it would be a very serious question about producing enough oil in this country.

Secretary DANIELS. It would be a very serious question.

Senator KELLOGG. I do not know what the dangers are, but I suppose there are very grave dangers. I would not like to ask questions in respect to confidential matters.

Secretary DANIELS. While there are dangers in Mexico, and while hardly a week has passed for three years when we have not been told that they would be closed next week unless we put troops around them, the work has gone on; and I have never supposed that Mexico would kill the goose that laid the golden egg.

Senator PHELAN. There are troops there. They are not Carranza troops. Under those conditions, the oil is taken out. Those are the reasons why it is taken out.

Secretary DANIELS. Well, we have kept gunboats down there constantly.

Senator KELLOGG. I do not wish to ask questions that should be discussed in executive session. I take it that as to privately owned lands and Government-owned lands, unless it is this particular reserve, you feel that everything should be done to produce the maximum amount of oil?

Secretary DANIELS. I do, indeed.

Senator KELLOGG. We probably can never have a greater emergency than at the present time.

Secretary DANIELS. Unless the war goes on.

Senator KELLOGG. The emergency depends on how long it will last?

Secretary DANIELS. Yes.

Senator KELLOGG. Leaving out of the question this particular reservation, can you suggest any means whereby this committee can prepare legislation that will increase the supply of oil in other territories?

Secretary DANIELS. Yes.

Senator KELLOGG. I should be very glad to hear about that.

Secretary DANIELS. There is a very large section of land in the territory belonging to the Osage Indians. It is supposed to be excellent oil land. That has not been touched. I talked to the Secretary of the Interior about getting that land for the Naval Reserve. Of course, the difficulty is that it belongs to the Indians, and the Secretary of the Interior could not give me rights superior to those of anybody else. He must protect the Indians, and when those leases are made they are made after public bidding. I understand there is a very large tract of land in that Indian territory that ought to be utilized.

Senator KELLOGG. What ownership?

Secretary DANIELS. It belongs to the Indians. The Interior Department, of course, is guardian for the Indians.

As I said just a while ago, a gentleman told me this morning that he had a very large tract of oil land, but that he had not opened it because the cost of putting in pipe lines and wells was so great that he did not have the money to do it.

Senator KELLOGG. Suppose they can not get pipe?

Secretary DANIELS. I suppose it is difficult.

Senator KELLOGG. The Government might commandeer it when private individuals could not.

Secretary **Daniels**. Yes. My own judgment is, with reference to oil and coal both, that it is a question of a very short time when we will have to commandeer, or make some arrangement to compel production in the very largest quantity, and fix the price.

Senator **Walsh**. Would not the first condition be to open up the source of these supplies?

Secretary **Daniels**. I think we should have some legislation to require the opening up of both oil and coal lands, but I think we should not touch this naval oil reserve until the very last, until every other expedient has been tried.

Senator **Kellogg**. I would like to ask you a question about that. It certainly would be necessary, if this country can commandeer it, to get every barrel of oil it can get, if the supply in Mexico should fall off or be destroyed, would it not?

Secretary **Daniels**. Of course, we would have to commandeer in order to carry on the war.

Senator **Kellogg**. It will take practically all that is produced. I have no doubt we can stop some of the automobiles without doing any harm.

Secretary **Daniels**. And probably do some good.

Senator **Kellogg**. Of course, transportation by automobiles, where they are used for legitimate purposes, could not be stopped without great injury.

Secretary **Daniels**. Of course not.

Senator **Kellogg**. Now, I would like to know about naval reserve No. 2. How many oil wells are there concededly operated there by owners who have a perfect right to operate?

Secretary **Daniels**. We have the figures of December, 1916.

Senator **Kellogg**. Well, that will do. I just want it substantially.

Senator **Husting**. Your question was with regard to the number of oil wells in operation the ownership of which is not in dispute?

Senator **Kellogg**. Yes, sir.

Lieut. Commander **Richardson**. One hundred and seventy-five.

Senator **Kellogg**. Now, I notice by the statement, although I do not know that it is accurate, that something like 100,000,000 barrels of oil have already produced from that oil reserve No. 2.

Secretary **Daniels**. That is right.

Senator **Kellogg**. I suppose, taking into consideration the migratory condition of this mineral, that continued production of oil is going to greatly injure the Government reserve. To what extent will it injure it?

Secretary **Daniels**. That is a very difficult question to answer. It depends upon the soil. It injures it to some extent. In some places a great deal; in some not very much.

Senator **Kellogg**. Generally speaking, it is considered, in these oil reservations, to be——

Secretary **Daniels** (interposing). Mr. Williams says one-third to one-half, generally.

Senator **Kellogg**. Then the Government reserve is going to be injured by the operation of these private wells?

Secretary **Daniels**. Yes; possibly one-third.

Senator **Kellogg**. I wish to ask you whether you think, under proper restrictions, it might be wise for the Government to procure what oil it can out of these wells and store everything that it can while producing from other sources for its private use, so as to conserve this oil? Under proper regulations, do you think that could be done?

Secretary DANIELS. Wherever it can be kept in the ground, it should be kept there; that is the only perfect storage. Wherever the drainage from adjoining wells might deplete it, however, it would be advisable to work the land and store the oil.

Senator KELLOGG. Owing to the great emergency, I was wondering whether the Government might buy all it could from private owners and, at the same time, take steps to produce and store its oil in order to save it from being taken by private owners by wells which are acknowledged to be operated legally?

Secretary DANIELS. Only from that part of the reserve adjacent to private wells that might be drained anyhow; the other part should be left untouched.

Senator KELLOGG. Do you think that if this war goes on two years it will be necessary for the Government to take every barrel of oil it can get, not only from known lands but other lands?

Secretary DANIELS. I have not made estimates. As the war goes on the demand is going to be greater and greater.

Senator KELLOGG. Suppose we assume that it is going to last two years; would it not be a good plan to make an estimate of where we are coming out?

Secretary DANIELS. Undoubtedly.

Senator KELLOGG. Of course I know that you have many other duties to perform.

Secretary DANIELS. But we should know that.

Senator KELLOGG. It seems to me, if we have any source from which that information can be gotten, we should have it.

Secretary DANIELS. It seems to me that the Navy only uses about 2 per cent of the oil produced in the United States.

Senator KELLOGG. We have got to furnish the allied countries, practically, with all their oil?

Secretary DANIELS. They have been getting some from Mexico.

Senator KELLOGG. I mean this country and Mexico.

Secretary DANIELS. Those are the chief fields.

Senator SHAFROTH. The testimony here is that Mexican oil comes to the United States and is reshipped to England.

Secretary DANIELS. I think some of it does. Formerly they had tank steamers sailing direct. I do not know just how it is forwarded now.

Senator SHAFROTH. They say it is prohibited. There is a prohibition against Mexican oils.

Senator WALSH. The fact is that none goes to the English Navy. Supplies go direct from Mexico to the general trade for industrial purposes in Great Britain, but none goes to the British Navy at all. None goes to our Navy. Our Navy gets no oil from the Mexican fields; neither does the English Navy, according to the testimony of Mr. Doheny. His statement is to the effect that the specifications of both navies exclude the Mexican oil. Accordingly, the Mexican oil all comes to the United States, is used here for industrial purposes, and substantially an equal quantity of American oil goes to the British Navy.

Senator **Husting**. Mr. Secretary, what is the fact in regard to the regulations of the Navy. Do they, in terms, exclude it, or in effect?

Secretary **Daniels**. Neither. We do not exclude it by terms or specifications.

Senator **Phelan**. How is Mexican oil excluded? The fact that it is excluded was testified to here on the authority, I think, of the Assistant Secretary of the Navy?

Senator **Husting**. Mr. Doheny so testified.

Lieut. Commander **Richardson**. Mexican residuum is excluded from use as a fuel oil, but not by name. It is by specification as to sulphur content; that is, the specification for 1918, the fiscal year ending June 30, 1918. I would like to state that for fuel oil supplied under the specifications for 1918, in case of Mexican distillates which exceed the allowed percentage of sulphur, this requirement is waived. The specification itself, by stating "sulphur not over 0.75 per cent," would exclude all Mexican residuums.

Senator **Husting**. Now, I want to ask whether there is in any of the regulations of this year or last year or any other year any term excluding Mexican oil as such? Do they use the words "Mexican oils"?

Lieut. Commander **Richardson**. The specifications for the fiscal year ending June 30, 1917, state that fuel oil meeting all the specifications, whether mixed American and Mexican oils or derived from American crude or from Mexican crude will be acceptable. There is nothing in the specification that provides for the exclusion of the Mexican oil.

Senator **Phelan**. It would exclude Mexican residuum?

Lieut. Commander **Richardson**. It would not in the current year.

Senator **Phelan**. The present year.

Lieut. Commander **Richardson**. That is, to the end of this month.

Senator **Phelan**. That excludes the Mexican residuum?

Lieut. Commander **Richardson**. That ends the 30th of this month. As a matter of fact, we have used Mexican residuums during the present fiscal year. We have used them to a limited extent.

Senator **Phelan**. Then, are the Mexican residuums excluded? You have stated that they are excluded.

Lieut. Commander **Richardson**. For the next fiscal year—1918.

Senator **Shafroth**. Can you state how many acres are contained in this naval reserve No. 2?

Lieut. Commander **Richardson**. Thirty thousand and eighty.

Senator **Shafroth**. How many in naval reserve No. 1?

Lieut. Commander **Richardson**. The total number of acres in No. 1 is 38,135.

Senator **Phelan**. Thirty-eight thousand, did you say?

Lieut. Commander **Richardson**. Thirty-eight thousand; yes, sir.

Senator **Shafroth**. How many are contained in the Wyoming naval reserve.

Lieut. Commander **Richardson**. The total is 9,520.

Senator **Shafroth**. Are there any other naval reserves?

Lieut. Commander **Richardson**. No oil reserves. Those acreages include lands patented to the railroads and others within the boundaries of the reserve.

Senator KELLOGG. Take this reserve No. 2. As I understand it, the total area of No. 2 is 30,080 acres. Then the Government claims 6,520 acres of that.

Lieut. Commander RICHARDSON. No sir. That is proven oil land. There is unpatented within that area 11,040 acres.

Senator KELLOGG. There is, according to the statement I have, patented to the Southern Pacific, 15,394 acres; patented under mining laws, 1,600 acres; patented under agricultural laws, 176 acres; under mineral applications, 7,383 acres; clear listed to patentees, 2,077 acres; area in school sections, 1,920 acres; vacant and unentered, 5,706. Do you know whether those figures are substantially correct?

Lieut. Commander RICHARDSON. They are substantially correct, but I have the figures here. The figures from which I was reading were prepared by the Department of the Interior. They are given in round numbers. Some of the sections do not contain 640 acres, and some of them contain more than 640 acres, so that if you had the exact figures you would have fractions of acres.

Senator KELLOGG. I wish to ask one or two more questions. As I understand it, this country and Mexico, speaking of them as one source of supply, must furnish the allied countries substantially all of their fuel oil and gasoline for their navies and transportation along the battle lines during the war, and have been furnishing them.

Secretary DANIELS. I do not know what per cent, but most of it.

Senator KELLOGG. There is very little oil that they can get from any other countries?

Secretary DANIELS. England gets quite a little oil from Persia.

Senator KELLOGG. That has been cut off lately?

Secretary DANIELS. There is a great deal of oil in Russia.

Senator KELLOGG. It is a fact, is it not, that the Galacian-Roumanian fields have been closed entirely to the allied countries; Russia has been practically closed, and very little can be gotten from the Dutch East Indies or Persia?

Secretary DANIELS. I do not know what the facts are, but we furnish most of the oil.

Senator KELLOGG. So that we must furnish from this country and Mexico material to carry on the war for all the allied countries?

Secretary DANIELS. Most of it; yes.

Senator KELLOGG. As I understand it, you think some estimate should be made as to what the requirement will be for the next few years?

Secretary DANIELS. Yes. There should be a survey of the possible oil fields in this country.

Senator KELLOGG. This investigation ought to be made immediately?

Secretary DANIELS. Yes; immediately. I asked the Federal Trade Commission about it, and that commission is now working up a statement showing how much land there is in this country, oil-bearing territory, whether owned privately or publicly. They are working up those figures now.

Senator KELLOGG. But our immediate supply must come from the known oil fields; is that correct?

Secretary DANIELS. Yes.

The ACTING CHAIRMAN. Do you know how the supply can be increased at the present time?

Secretary Daniels. I have given these figures of 15,360 acres of proven unpatented land outside of the naval reserve in California.

The Acting Chairman. Where is that land? That land is adjacent to this field?

Lieut. Commander Richardson. Yes.

Senator Phelan. It is now highly developed?

The Acting Chairman. And yet the testimony shows that in spite of that highly developed land, in spite of the prices being higher than ever before in the history of the country, and in spite of the fact that there is every inducement to increase the supply as much as possible, the supply is falling off.

Secretary Daniels. For several reasons.

The Acting Chairman. Does it make any difference what the cause is?

Secretary Daniels. It is the withdrawn land.

Senator Shafroth. They can not operate?

Secretary Daniels. It is in litigation.

The Acting Chairman. It is in litigation?

Secretary Daniels. Yes; it is withdrawn. Other people have claims to it.

The Acting Chairman. You advise the Government to fight it to a finish?

Secretary Daniels. That is not in the naval reserve at all.

The Acting Chairman. I know that.

Secretary Daniels. That is entirely a matter for Congress and the Department of Justice to take care of.

The Acting Chairman. But if they pursue the policy you have suggested, they will fight these suits to a finish?

Secretary Daniels. I believe that the policy of the Government should be to utilize everything else before they touch the naval reserve land. Then, if we finally come to a point where our condition is so serious that we must use the reserves, the Government should open them up, but they should not be given to people who have no legal claims.

Senator Walsh. That is a point concerning which I wish to interrogate you for a moment. As I understand you, your attitude is that if those lands were entirely free from adverse claims of any character, you would be adverse to touching that deposit?

Secretary Daniels. I should say not to touch it until you had exhausted the others.

Senator Walsh. Now.

Secretary Daniels. I say this should be held as a naval reserve.

Senator Walsh. That is to say, you do not feel that the conditions that now confront us are such that even this land, were it entirely free from adverse claims, should be used by the Government?

Secretary Daniels. I would say that the Government should utilize all other lands first.

Senator Walsh. Assuming you are right in your position, I want to know whether you recognize the situation outside of the reserves now as of such a character as that the Government ought to tap this reservoir?

Secretary Daniels. Not now.

Senator Walsh. If there were no adverse entries of any kind?

Secretary **Daniels**. Not exactly, because as this goes on oil is going to be in much more demand than now.

Senator **Walsh**. I understand your position to be that it does not make any difference to you about the claims.

Secretary **Daniels**. On the contrary, it does. The claims complicate the question.

Senator **Walsh**. But, if there were no claims at all, as I understand you, you would even then object to resorting, at this time, to that reservoir?

Secretary **Daniels**. If there were no claims at all, I would ask Congress to give me money and power to get the machinery ready to open these lands whenever the necessity arose for the Navy. In other words, I hold that this is a sacred setting aside of oil for the Navy, and that conditions have not arisen that are comparable to what may arise.

Senator **Walsh**. You do not really answer my question. We will assume that Congress has appropriated money, and we will assume that the pipe lines are in this territory. I gather from what you tell me now, in your testimony, that you would still not resort to that source of supply.

Secretary **Daniels**. I would take it out as the imperative needs demanded. Right now I would not; no.

Senator **Walsh**. I do not know whether you know it, but this is a feature of this matter that has never heretofore excited my interest especially. I have not been concerned in any way in it. I am interested in the general bill, to which, as I understand you, you have no objection at all.

Secretary **Daniels**. Not at all.

Senator **Walsh**. I want to call your attention to the report made by the Director of the Bureau of Mines to Mr. Baruch, the head of the advisory commission, which appears in the record, commencing at page 29. Have you seen the report?

Secretary **Daniels**. No; I have never seen it.

Senator **Walsh**. You will observe in the table at page 31, in this record entitled "Leasing of Oil Lands," Part I, figures showing the decline in stocks, etc. Then, if you will look at the bottom of it you will see that it says:

> It should be noted that the above statistics are based on stocks held by pipeline companies and do not include field storage.

I was going to invite your attention to the report of the Director of the Bureau of Mines, at pages 32 and 33. It reads as follows——

Secretary **Daniels**. Where is that?

Senator **Walsh**. At the top of page 32 [reading]:

> IMPORTS.
>
> In 1916 Mexico exported some 42,000,000 barrels of crude oil, of which considerably more than half was shipped to the United States. Should Mexico assume a strict neutrality basis toward the warring countries it would mean that the United States would have to supply to itself and its allies an additional 42,000,000 barrels of crude, which is equivalent to more than 14 per cent of the total estimated marketed production for 1917.

NORMAL DEMAND.

The normal domestic demand for crude oil embraces the refining needs and the needs for fuel. The most important product of the refineries is gasoline for our fast increasing thousands of automobiles and other gasoline-consuming engines. On January 1, 1915, there were 1,750,000 automobiles in the country; on January 1, 1916, 2,225,000; and at the present time there are about 3,250,000 machines in operation. Trucks, farm tractors, motor boats, etc., also call for an increased fuel consumption, as each year new machines are added to the number already in use.

Fuel oil is used by the railroads, by the industries, merchant marine, and in the Navy. The railroads have rapidly adopted oil as fuel for locomotives because of its greater efficiency and its lower price as compared with coal. One railroad alone in California is using more than 1,000,000 barrels of fuel oil a month in its locomotives. Approximately 34,000,000 barrels of oil are used per annum by the railroads of the Pacific coast. The industries have been adopting fuel oil instead of coal because of its lower price, and the new battleships being built by the Navy are all equipped to burn oil as fuel.

Exports.—In 1916 we exported 62,000,000 barrels of petroleum and its products, of which 43 per cent was fuel oil, 14 per cent gasoline, 33 per cent kerosene, and 10 per cent lubricants.

Then, under the heading "Recapitulation," I find this [reading]:

RECAPITULATION.

The production for the year 1917 may be approximately 9,000,000 barrels less than it was last year. Should the Mexican supply be withheld (some 42,000,000 barrels), our total available supply would be reduced about 51,000,000 barrels.

The demand for crude petroleum will certainly greatly exceed that for 1916. Estimates for the normal peace consumption for 1917 have been made in the following table by computing the per cent increase for each of the last two years and assuming that the normal peace consumption for 1917 will increase at the same rate.

My recollection is that he told us the total production was about 250,000.

Secretary **Daniels**. I think that is as remote a possibility as you might imagine, that Mexico should prevent its oil leaving the country. They depend upon it so largely for revenue that I do not think there is any danger of it.

Senator **Walsh**. I want also to invite your attention to the figures. It shows for 1914, 247,000,000 barrels; for 1915, 276,000,000 barrels; for 1916, 312,000,000 barrels; for 1917, 353,000,000 barrels.

The production for 1914 is not given, but for 1915 it is given as 281,000,000 barrels; for 1916, 296,000,000 barrels; and for 1917, 286,000,000 barrels.

Drawn from stocks, none in 1915; 18,500,000 barrels in 1916; and 67,000,000 barrels in 1917.

Now, continuing at the top of page 33, it reads [reading]:

Attention should be called to the fact that the 1917 estimate in the above table is based on normal peace consumption. Figures are not available to show the increased demand due to the war or increased exports to the allies, but with the many additional uses to which gasoline will be put, such as fuel for the patrol boats, the demand for petroleum and its products will probably be larger by 20,000,000 barrels than the estimated consumption given in the above table.

That means that our production fell off 9,000,000 barrels, and our consumption increased 20,000,000, making a disparity of 29,000,000 barrels for 1917.

It requires no deep thought for anyone to realize the seriousness of the petroleum situation, when the total reserve stocks on December 31, 1917—seven months hence—under certain conditions may not greatly exceed 50,000,000 barrels, which is only about two months' consumption.

The situation may be summarized in round numbers, as follows:

	Barrels.
Supply:	
Estimated decrease in production for 1917	9,000,000
Possible cessation of exports from Mexico	42,000,000
Total decrease	51,000,000
Demand:	
Estimated increase in normal consumption, 1917	41,000,000
Estimated increase above normal consumption due to war, 1917	20,000,000
Total increase	61,000,000
Total deficit, Dec. 31, 1917	112,000,000
Total stocks, Jan. 1, 1917	150,600,000
Total stocks, Jan. 1, 1918	38,600,000

(If the supply from Mexico is not interrupted this figure will be larger.)

That is, you will add 42,000,000 to that.

These figures are, of course, based upon the assumption that refineries will be able to obtain all the crude oil they desire, which is an improbability. In fact, at the present time many refineries in the country are not running to full capacity on account of the scarcity of crude. As a large percentage of the total stocks in the country is held or controlled by a comparatively few strong companies, it is not likely that a shortage such as indicated by the above figures will exist. In fact, such a condition of affairs will be prevented by the law of supply and demand. As soon as it becomes necessary to draw upon the reserve stocks to fill the demand, the stronger companies will refuse to part with their oil and the price will rise.

The calculations given above, which are based upon all the data of record in the Department of the Interior, show the present tendency of our supply and demand and make it of the greatest importance to take steps to meet the situation with no negative effects on the outcome of the war and with as little confusion as possible in our industrial life. Therefore, a greater production of oil is necessary.

I dare say you agree with that conclusion.

Secretary DANIELS. I think we should make every effort to increase the production of oil, but I do not think we ought hazard the possible fate of the war by taking naval-reserve oil.

Senator WALSH. The trouble is that a great many people think we hazard the result of the war if we do not take it, and the committee is obliged to choose between those two evils.

Secretary DANIELS. If the committee should come to the conclusion that the present emergency is the greatest we are going to have, and they must immediately, forgetting the future, take this oil and open this reserve, then I insist that you make provision for its being opened by the Government, and that the title be not vested in men who have no legal claims.

Senator WALSH. I am glad you spoke about that. I have given only very casual attention to this, but if I gather the thing right, it has never been suggested to anyone that those whose claims are fraudulent should have any consideration at all, but that the validity of each claim asserted should first be determined, and the fact of priority of right should be recognized.

The ACTING CHAIRMAN. Right along that point, I desire to say a word. We had a committee appointed, consisting of a special joint conference of the committees on the Public Lands of the House and Senate, and there were officers representing the Navy Department, the Department of the Interior, and the Department of Justice. They sat around this table together for some time. I have in my hand a copy of the printed hearing. Here is the proposition that was made as a substitute for the Phelan amendment, which was declined by the Secretary of the Navy. I will read from his letter. It is included in his letter to the committee, which is addressed to me as chairman of the special committee [reading]:

> That the provisions of the bill be modified, providing for a preferential lease within and without the naval reserves, to claimants of mining claims who had initiated their right to such claims prior to September 27, 1909, either through themselves or through their predecessors in interest, where there is no charge of fraud in the initiation or maintenance of such rights through dummy entry or otherwise: *Provided*, That the Department of the Interior shall first find that the said claimants and their predecessors in interest have in good faith prosecuted the development of such claims since their initiation to discovery of oil.

Senator WALSH. That would exclude all fraudulent claims.

Senator PHELAN. That was rejected by the Navy Department.

Secretary Daniels. Will you please read the answer?

Senator WALSH. There is a question of policy whether it should be done at all?

Secretary DANIELS. Please read the answer I gave.

Senator KENDRICK. In connection with amendment, I want to say that I do not believe it would apply with justice to the State of Wyoming, for the reason that any number of our people in the State of Wyoming are now, or, to state it the other way, have been locators upon oil lands and exercised as full diligence and as good faith in the prosecution of development as those who discovered oil; and yet, up to the time of these withdrawals, they had not discovered oil. As I understand that amendment, these men would be excluded?

The ACTING CHAIRMAN. No, no.

Senator KENDRICK. It says "who have discovered oil."

The ACTING CHAIRMAN. It could not possibly exclude Wyoming fields, because it was dealing with claims initiated prior to the first withdrawal order of President Taft.

Senator KENDRICK. What was the date?

The ACTING CHAIRMAN. September 27, 1909. I am reading from page 103 of the general oil leasing bills hearing.

Senator KELLOGG. December 23, 1916?

Secretary DANIELS. I suggest that it is very important to read my letter in full.

Senator SHAFROTH. I think it should be read.

The ACTING CHAIRMAN. Will you read it yourself, Mr. Secretary?

Secretary DANIELS. Yes.

The ACTING CHAIRMAN. It is at page 103.

Secretary DANIELS. You will observe that Senator Pittman read but a part of it.

Senator KELLOGG. Where will you begin?

Secretary DANIELS. At the third paragraph.

The ACTING CHAIRMAN. I read it only for the purpose of answering Senator Walsh's inquiry.

Secretary Daniels (reading):

The word "initiated" in the proposed amendment is understood to mean something less than claims initiated by work leading to discovery, and the phrase "in good faith prosecuted the development of such claims since their initiation" is understood to mean something less than the diligent prosecution of work leading to discovery, as the law requires. Otherwise the proposal would be to give only preferential leases to those who are now entitled to patents. The proposed amendment is understood as intended to give preferential leases on any part of the area withdrawn by the Executive order of September 27, 1909 (including naval petroleum reserves numbered 1, 2, and 3), to claimants not chargeable with fraud but who, under existing law, can not sustain their claims.

In the conference which was held to consider this proposal, the Commissioner of the General Land Office presented for consideration as a counterproposal the following:

"That upon relinquishment to the United States within 90 days after final denial or withdrawal of application for patent of any claim asserted under the mining laws to any unpatented oil or gas lands included in an order of withdrawal of naval petroleum reserve No. 2, in the State of California, the claimant shall be entitled to a lease for each asserted mineral location of 160 acres or less, upon which such claim is based and upon which said claimant, his predecessor in interest, or those claiming through or under him have, prior to the date of this act, drilled one or more producing oil or gas wells, such lease to be upon a royalty of one-eighth of the production of oil or gas produced and saved therefrom after first deducting from the gross production such oil or gas as may be used in the develpment or operating of said lands, and otherwise on the same terms and conditions as other oil and gas leases granted under the provisions of this act: *Provided*, That within 90 days from the date of this act or of final denial or withdrawal of application for patent, the applicant for a lease shall pay the United States for one-eighth of the oil or gas produced from the lands included in said claim subsequent to ———, at the current field price at time of production, which shall be in full satisfaction for all oil or gas extracted from said land prior to said lease: *Provided further*, That all royalties received under the provisions of this section from said naval petroleum reserve No. 2, whether in oil or money, shall be delivered or credited to the United States Navy: *And provided further*, That none of the provisions of this section or of this act shall be applicable to or affect lands or minerals included within the limits of naval petroleum reserve No. 1, in the State of California, or naval petroleum reserve No. 3, in the State of Wyoming."

This suggested counterproposal, if enacted into law, would give preferential leases, at a fixed royalty, from and after some date to be determined, to all claimants (whether chargeable with fraud or not, and without any rights under existing law) who have a producing oil well on any claim of not more than 160 acres within any withdrawn area, excepting naval petroleum reserves Nos. 1 and 3, the royalties from naval petroleum reserve No. 2 to go to the Navy.

It is unnecessary to discuss the relative merits of these proposals, since I am unable to assent to either as a whole or in principle. My reasons for this attitude, already well known to your committee through former hearings before the Public Land Committees, may be restated briefly as follows:

Reserve No. 2 contains in round numbers some 30,000 acres, of which 3,500 acres are embraced in unassailable patents; 15,500 acres have been patented to the Southern Pacific Railroad Co. and are now involved in suits seeking the cancellation of the patents on the ground of fraud; 2,080 acres are embraced in the claims of the Honolulu Consolidated Oil Co.; some 5,000 acres are embraced in unpatented mineral claims against which charges have been preferred. In addition to the above there are about 3,500 acres presumably not valuable for oil.

I am advised by the Attorney General that there is much reason to expect a favorable outcome of the pending litigation involving the lands patented to the railroad company (and it is also highly probable that the charges of fraud and illegality which have been preferred against those claiming the unpatented lands will be sustained in most instances). Accepting, as I must, this view of the legal department, I feel that the Government's interests, which in this instance means particularly the interests of the Navy, are too substantial to be sacrificed.

My opinion has always been and still is that whatever equities or rights these claimants have should be determined through court proceedings which have been, or will be, instituted, and that it would be highly inadvisable to put an end to all such court proceedings and determine these rights and equities on ex parte evidence.

The constantly increasing need of the American Navy for petroleum induced the withdrawal order of September 27, 1909, and the subsequent creation within the withdrawn areas of the naval petroleum reserves. The lands embraced in reserve No. 2 constitute the only well-proven and highly productive oil-bearing area now reserved for the use of the Navy. At the time of the first withdrawal, September 27, 1909, the unpatented tracts in this area were covered with alleged claims, very few of which were initiated and prosecuted in good faith; that is, by the initiation of work leading to discovery and diligent prosecution of such work thereafter. I am advised that many of the claimants have no rights enforceable in any court of law or equity and that they maintained possession in most cases by force or intimidation. The prospective prize was so rich that their successors by purchase or lease invested large sums of money in the development of these alleged claims in defiance of the law. These men are now asking the Congress to give them, at the cost of naval efficiency (which means at the cost of the national security), that to which they have no legal or equitable claim, and it is my understanding that this proposed remedial legislation is calculated to accomplish that result. I consider it to be the duty of the Navy Department to make every effort to fully protect whatever rights the Navy secured through the action of the President in setting aside these reserves for the exclusive use of the Navy, and as the head of the Navy Department I wish to make known my unalterable opposition to any measure that could have the effect of depriving the Navy of the reserves so created.

Very respectfully,

JOSEPHUS DANIELS.

Senator SHAFROTH. Do you believe that the oil of Wyoming could be used for the benefit of the Navy?

Secretary DANIELS. The oils of Wyoming?

Senator SHAFROTH. They are so far from the seashore that shipments could hardly be made for the use of the Navy?

Secretary DANIELS. They have not proven to be as valuable as those oil reserves in California.

Lieut. Commander RICHARDSON. There is a small reserve No. 2, which contains about 9,000 acres.

Senator SHAFROTH. Don't you think that is important to the Navy, that that reserve should be maintained, and that people should be excluded from taking oil from it?

Secretary DANIELS. That was the conclusion of the Secretaries of the Navy and Interior and of the President, when it was set aside.

Senator SHAFROTH. Is not the freight rate to the coast pretty nearly prohibitive?

Secretary DANIELS. You would not want to utilize that until you utilized that oil nearer the coast; but if the oil is going to be so scarce, you must take it for this emergency.

The ACTING CHAIRMAN. That applies to this emergency?

Secretary DANIELS. This emergency exists, but the emergency will become greater and greater as the war goes on.

The ACTING CHAIRMAN. Do you think there is going to be a greater emergency?

Secretary DANIELS. Oh, yes; if this war goes on.

Senator KELLOGG. In speaking of this emergency, I think we should include the war, whether it lasts one or two or three years. If we were to go at it to-morrow we could not be producing oil in less than six months.

Secretary DANIELS. The Southern Pacific Railroad produced oil in recent wells in less than 78 days, in California.

Senator KELLOGG. That is over two months. Has the Government got the material that is necessary to be put down in oil wells to produce it in three months?

Secretary **Daniels**. The Government has not got it.

Senator **Kellogg**. Can it get it and make practical use of it for the Navy in 90 days or 6 months?

Secretary **Daniels**. You mean out of the reserve?

Senator **Kellogg**. Yes, sir.

Secretary **Daniels**. I should say it would take that long.

Senator **Kellogg**. All the testimony that I have seen, although I have not seen it all, is to the effect that we have a situation where stocks are being depleted and the production is going down; also, the demands are increasing. Whether we are going to have oil to carry on the war for ourselves and our allies, depends upon whether Mexico furnishes its share; is not that the fact?

Secretary **Daniels**. This bill will not give oil to the Navy, necessarily. We are getting oil now, and the country is getting oil now. I have an offer made a few weeks ago by one of the great oil producers of 5,000,000 barrels of oil.

The **Acting Chairman**. At what price?

Secretary **Daniels**. It was not fixed.

The **Acting Chairman**. The market price, I suppose?

Secretary **Daniels**. No. There are a number of oil companies that could furnish us certain supplies. There is a committee, of which Mr. Bedford is chairman, that is getting out a list showing how much each company should supply to the Navy. We have given orders to furnish that oil at a price to be fixed after the Trade Commission has ascertained the cost of it. I do not think that we are in any danger of starvation from oil to-day, next week, nor next month. I think we are in much more danger, or will be, a year from now than we are now. I think if we will exert every effort to utilize all the oil lands outside of the naval petroleum reserves which are not now producing to full capacity, we will not be in any panic, and we may not have any dearth of oil. Of course, owing to the greater demand, oil is more difficult to get. All that comes back to the fact that if you open up this oil land and let it go into the pool, you have given away the best Navy land; it will be gone then, and you will be in more trouble than now.

Senator **Kellogg**. Don't you think it will take longer than a year to get ahead? The question is whether we can have a supply irrespective of Mexico.

Senator **Husting**. I want to say this: I think the testimony shows that the stock on hand is something like 39,000,000 barrels, and that it is being depleted at the rate of 2,000,000 barrels——

Senator **Shafroth** (interposing). That is the estimated stock on hand January 1, 1918.

Senator **Husting**. Mr. Requa, I think, said that the stock on hand would not be depleted for three years. It was put, by Mr. Doheny, at two years, or a year and eight months. According to the testimony given before this committee, therefore, there is no danger of the oil supply being depleted in the next two years.

Senator **Kellogg**. I have not seen that testimony. It was depleted last year to the extent of 67,000,000 barrels.

Senator **Husting**. You will find that in his statement. I asked him about that myself.

Senator **Walsh**. The testimony of Dr. Manning, according to his report, is that at the end of 1915 our stocks were 170,000,000; at the end of 1916, they had been reduced to 150,000,000. He figures that at the end of 1917 the stocks will be 38,000,000. If you add 42,000,000 to that you have 80,000,000; that is, during 1917, with peace demands. The stock is reduced from 150,000,000 to 80,000,000, so that at the end of 12 months, at that rate of depletion, to say nothing about the increased consumption during war times, you can not go through the year.

Senator HUSTING. That is one way of stating it.

Senator WALSH. Those are the figures.

Senator HUSTING. But there are other figures.

Senator WALSH. If we get 42,000,000, the stock will be 80,000,000; the reduction will be from 150,000,000 to 80,000,000, which is a reduction of 70,000,000 in one year in the stock on hand, and you start in the year with only 80,000,000.

Senator STERLING. Referring to the estimate of the stock on hand, 38,600,000, that excludes the production of Mexico?

Senator WALSH. That is the report of the officer of the Government charged with the duty of looking after these things.

Secretary DANIELS. You will see, if you look at page 31 of the same report, that the stock in the United States will last until June, 1920, at the present rate of production and consumption. The stock in the Appalachian, Lima-Indiana field, will last until January, 1927. The stock in the Illinois field will last until 1918; Mid-Continent, 1920.

Senator WALSH. From what are you reading?

Secretary DANIELS. Page 31, the tabulated statement near the bottom of the page.

Gulf Coast, 1921, and California, 1920. The United States, as a whole, will last until June, 1920.

Now, I do not think any of us have any idea that, with the present demand and price of oil, in all these fields there will not be increased production. Heretofore, two or three years ago, we could get oil at, I think, 64 cents a barrel and 85 cents a barrel. Now, they are quoting it at $1.85. With that tremenduously increased price everything is stimulated, and I do not think we have yet reached the point where nothing can be done but to take reserve No. 2.

Senator KELLOGG. I have not made such a suggestion.

Secretary DANIELS. I know you have not. I am entirely in agreement, of course, as we all are, about trying to get more oil. It is a serious situation. We are trying to find the way. Of course, if the winning of the war means the taking of the naval reserve, it should be taken. Nothing ought to stand in the way, and no suggestion from an executive officer, who may be able to look into the future, ought to weigh at all. I am looking to the time of the chief emergency. I contend it is not here now; it will be later, perhaps; when it comes I do insist that it shall not be given to men who can not prove legal title to it.

Senator WALSH. That brings me back to the matter concerning which I was interrogating you when the diversion occurred. I ask you now if you will have the kindness to attend to the reading of the amendment which the gentlemen who are interested in this matter proposed. I am reading from page 103, from your letter, as follows [reading]:

> That the provisions of the bill be modified, providing for a preferential lease within and without the naval reserves, to claimants of mining claims who

had initiated their right to such claims prior to September 27, 1909, either through themselves or their predecessors in interest, where there is no charge of fraud in the initiation or maintenance of such rights through dummy entry or otherwise; provided that the Department of the Interior shall first find that the said claimants or their predecessors in interest have, in good faith, prosecuted the development of such claims since their initiation to discovery of oil.

Now, Mr. Secretary, will you be frank enough to say here that it is not proposed by the committee, or any member of the committee, that these lands should be absorbed by people who have made fraudulent entries?

Secretary **Daniels**. Will you tell me what the word "initiated" means?

Senator **Walsh**. Whatever it means, Mr. Secretary, it must be absolutetly free from fraud under the provision here.

Secretary **Daniels**. Well, I think the word "initiated" is too large. The word "initiated" might mean posting up a claim on a tree somewhere.

Senator **Walsh**. Whatever it means, Mr. Secretary, it must not be tainted with fraud, either through a dummy entryman or otherwise.

Secretary **Daniels**. Yes.

Senator **Walsh**. Won't you, then, withdraw the statement that it is proposed to let these lands go into the hands of fraudulent entrymen?

Secretary **Daniels**. What I want to know is what is proposed by "initiated"? When you come to fraud, you have a man, perhaps, who sticks up on a tree that he has initiated a claim. I don't know who sticks that up.

Senator **Walsh**. Whoever sticks it up, it must be absolutely free from fraud. So, whether the policy be wise or unwise, do you not feel as though, in fairness and justice, you should withdraw the statement that it was proposed to allow the lands to be taken by fraud?

Secretary **Daniels**. If anyone here supposed for a moment that I thought any member of this committee was helping anyone guilty of fraud, of course, I have been misunderstood. I never had any such thought. There were amendments, however, which would have allowed men to go fraudulently upon the land. Now, of course, I have never supposed that any member of the committee was going to help anybody, but merely that they would get in under it. That word "initiated" is as big as a barn door.

I would like, before anything is done along this line, as to the legal end of it, that the Attorney General be requested to come before the committee with reference to bill 45.

Senator **Phelan**. I do not think the Secretary has answered the question.

Secretary **Daniels**. I am very frank to say that these words exclude a man who is guilty of fraud, but I will say that the word "initiated" is so broad a word that, in my judgment and in that of my legal advisers, it would have the result of taking away lands in the naval reserve and giving them to people who could not maintain their claims in any court.

Senator **Walsh**. I am assuming now that the committee may not agree with you concerning the wisdom of the policy you have outlined, or that they may want to put some amendments on this bill. That is why I am calling your attention to this proposed amendment, to see if it can be justly charged that it will let in fraudulent entries. If that particular part is disposed of, and the exclusion of fraudulent entries is sufficient, the criticism then made of it hinges upon the word "initiated." As to that, as I understand you, you do not venture an expression further than to say that your legal advisers indicated to you that it is too broad and indefinite a term.

Secretary DANIELS. I say, further, about the legal aspect of it, that I should like for you to call the matter to the attention of the Attorney General and to the members of the Department of Justice who have made a study of the matter before any action is taken.

The Attorney General was called to consider bill 45, in which he says he has no interest, and of which he has made no study. Bill 48 he has studied a long time, and his judgment about that matter would be, of course, far more valuable than mine.

Senator WALSH. There is another question. You used the word "trespassers." You said that those people are trespassers. Of course, any man who entered upon the land after the withdrawal order was put out, might be very properly spoken of as a trespasser. However, will you notice, Mr. Secretary, that this refers to the men who initiated their claims prior to September 27, 1909?

Senator HUSTING. I want to supplement that.

Senator WALSH. Do not supplement my question.

Senator HUSTING. Well, I want to call attention, before the Secretary answers this, to this particular feature: While initiation of the claims might not have been a trespass, yet after the order of withdrawal, discovery not having been made, would the word "trespasser" apply to the man who kept on doing something that originally was legal, but afterwards became illegal by the occurrence of some subsequent act of the Government?

Senator KELLOGG. You do not mean that the Government could make a legal act illegal by mere fiat of law?

Senator WALSH. Of course it can not be a trespass.

Secretary DANIELS. A man is not a trespasser unless he violates the law.

Senator WALSH. Prior to September 27, 1909.

Secretary DANIELS. Was that the date of the order?

Senator WALSH. That was the date of the order of President Taft.

Secretary DANIELS. I have forgotten the exact date. My contention was that any man who entered after that order was made was a trespasser—whatever date that was.

Senator KENDRICK. Mr. Secretary, I would like to ask you if you know that, incidentally, the record of the Government in these locations of these lands has not been an enviable one. There have been many instances, to my knowledge, when the Government, through its inspectors and geologists, has declared against certain fields.

Secretary DANIELS. Against what?

Senator KENDRICK. Against the presence of oil in certain fields, and has decided that they were of little worth, or not worth while investigating, or developing at all. Then, private capital has entered those fields and has begun operation, and in a number of cases in my State the Government has stepped in and withdrawn the oil fields because of the very light and information furnished by private capital.

Senator PHELAN. Without compensation?

Senator KENDRICK. I beg pardon?

Senator PHELAN. Without compensation?

Senator KENDRICK. Without any consideration whatever.

Senator SMITH. Do you mean that they said that certain lands did not bear oil, and that afterwards, when private capital went in, and showed better conditions, the Government reserved that same land?

Senator KENDRICK. Exactly.

Secretary DANIELS. Of course, I have no knowledge of that.

The ACTING CHAIRMAN. Let me call attention to the time that this proposal was made to the Secretary; in fact, it was made to all three departments. It was not made to the Secretary at all. I am reading from page 102 [reading]:

> The CHAIRMAN. I have made the most liberal proposition that could be made. I have eliminated the fraud class.
>
> Representative FERRIS. Mr. Chairman, let me submit something. I suggest, and move if necessary, that the view of the conference be that the three departments consider the advisability and acceptability of the chairman's proposal; and if they do not agree with it that they come back with a counterproposal, so that we can agree to have something on which to pass. If they accept your proposal, the conference will have made progress; if they will not accept your proposal, let us have their counterproposal.

That is the way it came up. It was the pure intention of the conference to eliminate all fraud cases.

Senator WALSH. There was one other question that I wanted to address to you, Mr. Secretary. You recognize, of course, that the operation of these wells on the patented land within naval reserve No. 2 is depleting, to some extent, the stock in the adjacent public lands within the reserve?

Secretary DANIELS. Of course, any well adjacent to them will, to some extent, if not offset.

Senator WALSH. As I understand, the stocks and the value of the supply in the public lands adjacent may be depleted to the extent of 33⅓ to 50 per cent.

Secretary DANIELS. In varying quantities.

Senator WALSH. At least that.

Secretary DANIELS. If they are not worked. I would not say "at least"; some not so much—varying quantities.

Senator WALSH. Are any steps being taken, Mr. Secretary, or could you recommend to the committee any legislation which would preserve the property of the Government from thus being depleted and deteriorated?

Secretary DANIELS. Well, of course, we have been embarrassed by the fact that this is all in litigation. These matters are in litigation, so that we have not been able to do what we might have done otherwise.

Senator WALSH. The Congress of the United States, I imagine, will feel that it should do something to preserve the Government's property there. If there is anything you can recommend, we would be glad to hear it.

Secretary DANIELS. I certainly would not recommend that you give up the lands to people who have no legal claims.

Senator WALSH. We understand that. Can you offer something that is constructive?

Senator SMITH. Senator, if I understand you, the proposition is this: In the Government's reserve there are patented lands that are gradually denuding the Government oil; and the suggestion is whether any means can be found of reaching that trouble. If these men take patented lands on the outside they can claim all creation. They can get the oil, unless the Government meets them by drilling wells and taking it itself.

Senator WALSH. Mr. Secretary, if you owned the adjacent land, and if it was your private property, would you stand by and see your neighbors thus depleting the stock within your land without doing anything about it?

Secretary DANIELS. If this case was settled and I owned the land I would take charge of it entirely. However, this is in litigation and is now in the hands of the courts. They are handling that part of it. The judge is appointing receivers, and they take out the oil when it is wisest.

The ACTING CHAIRMAN. He is not sinking any wells; he has no authority to do that.

Senator WALSH. I think we are all guilty of gross neglect of the Government's interests in this matter, upon that statement of the situation.

Secretary DANIELS. I have not stated that we were guilty of gross negligence.

Senator WALSH. I feel we are, however you may feel about it.

Secretary DANIELS. Not on my statement.

Senator WALSH. You stated that the operation of these wells on the patented land was depleting the stocks on the adjacent Government land.

Secretary DANIELS. Commander Richardson, who is familiar with the work out there, will answer that.

Senator WALSH. I will be glad if he will answer it.

Lieut Commander RICHARDSON. There is no idle land; that is, no proven oil land that is not being operated by some one. If it is patented, it is being operated by the patentee. Some are claimed by the Government and also by oil companies who are operating them.

Senator HUSTING. What proportion is the Government getting of that oil?

Lieut. Commander RICHARDSON. In naval petroleum reserve No. 2, where the cases are in suit and a receiver has been appointed, the net proceeds are being deposited in escrow, under the orders of the court.

Senator STERLING. But there are 175 wells the titles to which are not in dispute.

Lieut. Commander RICHARDSON. Yes.

Senator STERLING. They are on naval reserve No. 2?

Lieut. Commander RICHARDSON. On patented lands.

Senator WALSH. Within the exterior boundaries?

Lieut. Commander RICHARDSON. Yes, sir.

Senator STERLING. Are they scattered quite generally throughout the reserve?

Lieut. Commander RICHARDSON. Yes; but nearly all those that are line wells are offset by other wells on unpatented land.

Senator WALSH. All those are being operated?

Lieut. Commander RICHARDSON. Yes; except in about two sections.

Senator WALSH. How many receiverships are operating?

Lieut. Commander RICHARDSON. It is all in the hearings. I do not remember now.

Senator PHELAN. The receiver's oil does not go to the Navy?

Secretary DANIELS. Not a bit.

Senator PHELAN. It goes into the market?

Secretary DANIELS. Yes.

Senator WALSH. How many receiverships are there to offset these 175 wells operated by private parties?

Lieut. Commander RICHARDSON. I can find it in the record. Nine quarter sections in the naval petroleum reserve.

Senator WALSH. Nine receiverships for nine quarter sections?

Lieut. Commander RICHARDSON. One receiver for——

Senator WALSH (interposing). Nine wells?

Lieut. Commander RICHARDSON. Nine one-quarter sections.

Senator WALSH. Nine quarter sections within the receivership proceedings?

Lieut. Commander RICHARDSON. Yes.

Senator WALSH. Is not more than that area drained by these 175 wells?

Lieut. Commander RICHARDSON. I think in the Honolulu case there are probably 11 quarter sections. There were 13 quarters that were clear listed that are being operated by the Honolulu Oil Co. There has been no receiver appointed. It has not reached that stage.

Senator WALSH. That is quite apart from the question I asked you. I am speaking about the number of wells being operated upon the adjacent Government land to offset the 175 wells that are being operated by private owners.

Lieut. Commander RICHARDSON. Oh, I did not understand the question.

Senator WALSH. They are being operated, of course, by receiverships, because that is the only way the Government is operating?

Lieut. Commander RICHARDSON. At the same date that there were 175 wells on patented land there were 140 wells on unpatented land.

Senator STERLING. Were they in contest?

Lieut. Commander RICHARDSON. Yes.

Senator WALSH. Every one of those 140?

Lieut. Commander RICHARDSON. On unpatented land.

Senator WALSH. How many were included within the receiverships?

Lieut. Commander RICHARDSON. I do not know, but all of them were being operated.

Senator WALSH. Are there any on the unpatented lands over which receiverships exercise no jurisdiction?

Lieut. Commander RICHARDSON. Yes.

Senator WALSH. How many?

Lieut. Commander RICHARDSON. I have not the figures.

Senator PHELAN. Thirty-five, I am informed, in the hands of the receivership, being operated.

Senator KELLOGG. Only 35?

Senator WALSH. One hundred and seventy-five on the patented lands. How many were on the unpatented lands?

Lieut Commander RICHARDSON. One hundred and forty.

Senator WALSH. Thirty-five of those being operated by the receivers?

Lieut. Commander RICHARDSON. Thirty-five or forty.

Senator WALSH. Thirty-five. Leaving 105 being operated by private owners on unpatented land, so that, as a matter of fact, there are 175 and 105—280 wells being operated by private owners as against 35 being operated by receiverships; is that the situation?

Lieut. Commander RICHARDSON. That is about it.

Senator WALSH. Well, now, you feel in that situation of affairs that the adjacent Government lands are being reasonably well taken care of when there are 35 wells operated on the one side and 280 on the other side?

Lieut. Commander RICHARDSON. I think that misstates the case, because all those operated on unpatented land may be in suit, and the Government may be endeavoring to recover the value of all the oil that has been extracted.

Senator WALSH. That is what I am trying to find out. Up to the present time, however, you have not attempted to arrest the appropriation of the oil through receiverships or otherwise, except in the cases of 35 wells, or thereabouts?

Lieut. Commander RICHARDSON. And the Navy Department had absolutely no control of it. That is controlled by the Interior Department.

Senator WALSH. We are not endeavoring to locate the blame; we are endeavoring to get at the facts. The fact is, as I understand it now, that there are practically 280 wells operated, 140 of them upon the patented land operated by private parties, 105 practically on unpatented lands being operated by private parties, and then there are 35 wells with respect to which the Government's rights are protected by receiverships.

Lieut. Commander RICHARDSON. That is substantially true. The figures are given correctly by the Interior Department on page 69 of this special joint conference. The K. T. & O., the operating company of the Southern Pacific Railroad, at that time were operating on the red sections 57 wells. Those 57 wells were involved in suits. On the blue sections, shown on the charts, patented, there were 118 wells being operated, making a total of 175 wells being operated on patented land. Fifty-seven were on patented land that was under attack by the Government. There were remaining 140 wells operated on unpatented land. Of that number, I am informed, from 35 to 40 are in the hands of the receivers.

Senator WALSH. That is what I want to know from you. I want you to give your opinion from your study of the matter as to whether the Government's interests and rights are being sufficiently protected by 35 wells on one side and 280 on the other.

Lieut. Commander RICHARDSON. I do not agree with your statement that there are 35 wells on one side and 280 on the other.

Senator WALSH. Let me ask the question this way. Out of how many wells is the Government now getting its share of the oil that is extracted?

Lieut. Commander RICHARDSON. Through receiverships, 35 to 40.

Senator WALSH. Exactly.

Lieut. Commander RICHARDSON. But it is believed that the Southern Pacific Railroad is big enough to pay damages if the Government wins.

Senator WALSH. That is another question. We will get to that directly.

Lieut. Commander RICHARDSON. And also other companies.

Senator WALSH. There are 35 being protected. As to the others, you will be obliged to resort to getting damages. You may recover. That is the situation?

Lieut. Commander RICHARDSON. Yes.

Senator WALSH. Now, do you feel, under those circumstances, that the rights of the Government are being sufficiently protected, considering the depletion in the value of the adjacent lands, by these 35 receiverships?

Lieut. Commander RICHARDSON. Well, I do not think so, because an effort is being made to-day to have receiverships appointed in other cases.

Senator WALSH. Yes. Suppose that reciverships were appointed in the cases of all wells drilled upon the unpatented lands?

Lieut. Commander RICHARDSON. And the Southern Pacific.

Senator WALSH. And the Southern Pacific. You would still have how many private wells operating?

Lieut. Commander RICHARDSON. One hundred and eighteen, held by unassailable title.

Senator WALSH. Would you feel that those wells could do any damage whatever to the adjacent Government lands?

Lieut. Commander RICHARDSON. They ought to do very slight damage, surrounded by producing wells on other lands.

Senator WALSH. May I ask you what position you hold?

Lieut. Commander RICHARDSON. Lieut. Commander in the Navy.

Senator WALSH. What particular branch of the service?

Lieut. Commander RICHARDSON. In the line.

Senator WALSH. What is your age?

Lieut. Commander RICHARDSON. 39.

Senator WALSH. How long have you been in the Navy?

Lieut. Commander RICHARDSON. Nineteen years.

Senator WALSH. What has been the particular line of your duties?

Lieut. Commander RICHARDSON. For the last nine years, or ten years, I have been doing engineering duty.

Senator WALSH. Just what is the character of work you do as engineer?

Lieut. Commander RICHARDSON. I am in the Bureau of Steam Engineering—in the designing division.

Senator WALSH. You are not a mining engineer?

Lieut. Commander RICHARDSON. No.

Senator WALSH. Have you had anything to do with oil drilling?

Lieut. Commander RICHARDSON. Not a bit.

Senator WALSH. In the handling of oil wells?

Lieut. Commander RICHARDSON. Not a bit.

Senator WALSH. You are not a geologist?

Lieut. Commander RICHARDSON. Not at all.

Senator WALSH. Do you feel that any legislation by Congress is necessary in order to further protect the interests of the Government in these lands within the reserve, in view of the drainage process that is going on by these wells that are on the land, patented and unpatented?

Lieut. Commander RICHARDSON. You want my personal opinion?

Senator WALSH. You seem to have studied the thing a great deal.

Lieut. Commander RICHARDSON. My individual opinion is that I would settle the matter, and settle it quickly.

Senator WALSH. Just how?

Lieut. Commander RICHARDSON. Any way, rather than have the thing before Congress every year for three or four or five years.

Senator WALSH. That is aside from my inquiry. My inquiry about the matter is whether there is, in your opinion, any legislation necessary to take care of the situation in view of the fact that these wells are draining the territory that belongs to the Government.

Lieut. Commander RICHARDSON. I do not see how the Congress could do anything to protect the Government's rights in those lands, because Congress can not, without legal proceedings, violate the rights of private individuals; private individuals claim every acre of that land. Now, whether their claims are valid or not, can only be determined in court.

Senator WALSH. Suppose you owned this land instead of the Government, and some fellows got on the land and claimed that the land belonged to them; what would you do?

Lieut. Commander RICHARDSON. Assuming I had the same responsibilities for the future supply of oil to the fleet?

Senator WALSH. Assume you owned the land instead of the Government of the United States, and a large number of other people had got upon the land and were asserting title to it, and were drilling wells down there, what would you do?

Lieut. Commander RICHARDSON. That is what I wanted to say. I would compromise it and take it out of the courts and settle it in some way with these people.

Senator WALSH. You would make an adjustment and settlement of the adverse claims?

Lieut. Commander RICHARDSON. Yes, sir.

Senator WALSH. And when you did that, what would you then do if the other fellows would go on and drain the territory with their wells upon the adjacent land. What then would you do, if you had settled and compromised with the claimants?

Lieut. Commander RICHARDSON. I would act like any private individual who had a market for oil, and I would either develop the lands and retain them in my ownership, after the settlement, or else I would lease them, like any other individual would do, on the most profitable basis I could.

Senator WALSH. You would either operate or lease them?

Lieut. Commander RICHARDSON. Yes, sir.

Senator PHELAN. You would not attempt to conserve them?

Lieut. Commander RICHARDSON. No, sir.

Senator PHELAN. You are familiar with the testimony taken here, to the effect that this is not capable of being made a reserve for future uses of the Navy on account of private ownership? Putting yourself in the place of the Government, would you conserve it, in view of the fact it has been constantly drained and will not be reserved 10 years?

Lieut. Commander RICHARDSON. I would not agree or admit that the people who have stated it could not be reserved 10 years were correct.

Senator PHELAN. It has been so testified, that it will not be valuable for the needs of the future.

Secretary DANIELS. You say it has been testified to that effect?

Lieut. Commander RICHARDSON. The Secretary of the Interior, answering the specific question from the Navy Department, stated:

> As nearly as can be estimated, the privately owned lands within and surrounding the present naval petroleum reserves will, when developed, result in a depletion of the supply in these reserves by not more than 20 per cent.

Senator HUSTING. Who said that?

Lieut. Commander RICHARDSON. The Secretary of the Interior.

Senator WALSH. What is the aggregate amount of the deposit?

Lieut. Commander RICHARDSON. In the naval petroleum reserves?

Senator WALSH. Yes.

Lieut. Commander RICHARDSON. Three hundred and eighty million barrels.

Senator WALSH. If you distribute it proportionately as to area, what proportion of that would fall to the Government land?

Lieut. Commander RICHARDSON. Well, it is estimated by a representative of the Bureau of Mines that under the unpatented lands in that reserve there were 130,000,000 barrels of oil.

Senator WALSH. Twenty per cent of that would be quite a little quantity of oil?

Lieut. Commander RICHARDSON. Yes; but there would still be an appreciable amount left.

Senator WALSH. But the 20 per cent would be gone, according to the statement. That is worth looking out for.

Lieut. Commander RICHARDSON. Oh, yes, sir.

Senator HUSTING. Let me ask you a question.

Lieut Commander RICHARDSON. Pardon me just a moment. That was provided we did nothing; that we did not operate anything but patented land and did nothing to protect it.

Senator WALSH. At the present time you are not doing anything, except through the receivership for 35 wells?

Lieut. Commander RICHARDSON. They are drawing oil off unpatented lands to prevent the patented lands from getting it.

Senator WALSH. That is all you are doing to protect this oil; that is, you have these receiverships for these 35 wells?

Lieut. Commander RICHARDSON. I would not say that.

Senator PHELAN. Over 380,000,000 barrels are supposed to be contained in that reserve. One third of that has been withdrawn. Mr. Doheny testified that it was not a valuable reserve for two reasons: First, because it was being constantly depleted by the actual taking of the oil within the ground; and, second, by the reduction of gas pressure which made it impractical and highly expensive in future years to mine for the oil. I think, considering the amount of oil that is being taken out every day and the testimony that has been given here, it is safe to conclude that it is not valuable as a reserve. So, naval reserve No. 2 is not such a very important matter, whatever may be said of naval reserve No. 1, which is practically untouched.

Senator **SHAFROTH**. I would like to get some information that I think should go into the record. You seem to be familiar with the figures. I wish you would tell me how many oil reserves there are in the United States, excluding the Navy. You have given those.

Lieut. Commander **RICHARDSON**. I do not think there is such a thing. To my knowledge, there is no oil reserve in the United States outside of the naval petroleum reserve, except the western half of the Osage Nation, which is believed to be very valuable oil land.

Senator **SHAFROTH**. How many acres is that?

Lieut. Commander **RICHARDSON**. I do not know, but the Department of the Interior estimates from the geological formation, the surface indications, and proximity and similarity to adjacent proven fields, that it will produce about 350,000,000 barrels of oil of a very high grade.

Senator **SHAFROTH**. There were set aside in the last few months, in the State of Colorado, oil shale lands estimated to contain——

Lieut. Commander **RICHARDSON** (interposing). Twenty billion barrels.

Senator **SHAFROTH**. Does that [indicating] cover it? Are there any other reserves?

Lieut. Commander **RICHARDSON**. That shale is the ultimate source of oil, when no oil is available from any other source, because it is so very expensive, and so much work is required to produce a barrel of oil.

Senator **SHAFROTH**. What must oil sell for to make that a productive field?

Lieut. Commander **RICHARDSON**. I do not think accurate estimates have been made, but it has been stated by some one during these hearings that it could be produced for $4 a barrel in Colorado.

Senator **SHAFROTH**. Are there any other fields that have been preserved in the same manner?

Lieut. Commander **RICHARDSON**. Some shale lands in one or two reserves in Colorado.

Senator **SHAFROTH**. There are about 57,000 acres in Rock County, Colo.?

Lieut. Commander **RICHARDSON**. Yes, sir.

Senator **SHAFROTH**. Tell us the amount in Utah. How many acres?

Lieut. Commander **RICHARDSON**. I can find that for you, Senator.

Senator **SHAFROTH**. I wish you would.

Lieut. Commander **RICHARDSON**. Eighty-six thousand five hundred and eighty-four acres in Utah, and 45,440 acres in Colorado.

Senator **STERLING**. What are you reading from?

Lieut. Commander **RICHARDSON**. Page 65 of the proceedings of the special joint conference. In there are contained all the withdrawals and all the acts relating to the development of oil lands.

Senator **STERLING**. Are there any other reserves that were made?

Lieut. Commander **RICHARDSON**. That is all that I know of.

Senator **STERLING**. Have there been any oil reserves made by the Government not for naval purposes?

Lieut. Commander **RICHARDSON**. No, sir.

The ACTING CHAIRMAN. Mr. Secretary, I want to ask a few questions about this map here.

Senator HUSTING. Before you take that up I would like to ask the Commander some questions. You were asked a little while ago, by Senator Walsh, in regard to your qualifications. I want to ask you what experience you have had in connection with this oil question. How many years have you spent looking into the oil situation in the United States?

Lieut. Commander RICHARDSON. I studied it fairly constantly for three years. I have attended most of the hearings before this committee and the House committee, and I have certainly studied over the printed hearings. I am familiar with the hearings, the correspondence and the papers.

Senator HUSTING. Have you been in the oil fields?

Lieut. Commander RICHARDSON. I have been in the oil fields.

Senator HUSTING. There has been something said here about the question of conserving the interests of the United States in the oil lands. The oil is being depleted by wells, to the extent of 20 per cent, as I understand it. That 20 per cent that you spoke of a little while ago is 20 per cent of the total yield that is estimated will be depleted?

Lieut. Commander RICHARDSON. I understand this to mean that if the privately owned lands were operated, and the offset wells on the Government lands were not operated, the privately owned lands would get 20 per cent of the oil supposed to be under the Government lands.

Senator HUSTING. The total of all the oil in the naval reserve?

Lieut. Commander RICHARDSON. No, sir. Twenty per cent of the oil under the lands belonging to the Government.

Senator HUSTING. Twenty per cent of all?

Lieut. Commander RICHARDSON. I understand it to mean that if the patented wells are operated and those on unpatented land do not operate. For purposes of comparison we will take an estimate of 130,000,000 barrels of oil. If no wells on that land were operated, the Government would lose 20 per cent of the 130,000,000 barrels; but if the wells on unpatented land were there as an offset, the Government would not lose that amount.

Senator HUSTING. The Government would save all the oil that belonged to it?

Lieut. Commander RICHARDSON. Almost.

Senator HUSTING. That is one of the things that could be done by the Government, could it not, Lieut. Commander, in the way of conserving oil—operating offset wells?

Lieut. Commander RICHARDSON. It could be done by the Government.

Senator HUSTING. Under the Phelan amendment I believe all that the Government was to get, if it turned these oil wells over to the patent owners of claims, would be one-eighth—under the most favorable circumstances?

Lieut. Commander RICHARDSON. It all depends upon which Phelan amendment applies. If one applies the Government gets nothing; if the other one applies, the Government may get one-eighth.

Senator HUSTING. That was the maximum that the Government could get under the Phelan amendment—one-eighth?

Lieut. Commander RICHARDSON. Yes, sir.

Senator HUSTING. If the Government loses the suits, it may not get anything?

Lieut. Commander RICHARDSON. The Phelan amendment was an alleged compromise.

Senator HUSTING. So that all the Government would have gotten out of the entire field of reserve No. 2 would be one-eighth of the total supply; is that true?

Lieut. Commander RICHARDSON. Yes, sir; and——

Senator HUSTING (interposing). Now, under existing circumstances, the Government is going to get one-eighth in all those cases that are in controversy, where the Secretary has made a contract?

Lieut. Commander RICHARDSON. Yes, sir.

Senator HUSTING. In that respect, we are getting all we could get, under the most favorable circumstances, under the Phelan amendment.

Lieut. Commander RICHARDSON. There are none of those temporary contracts now operating in the naval petroleum reserve.

Senator KELLOGG. What does the ordinary owner of land get where he leases it?

Lieut. Commander RICHARDSON. It depends upon the character of the land. If it is wildcat land when he first leases it, he expects to get one-eighth.

Senator KELLOGG. Do you know what they do get?

Lieut. Commander RICHARDSON. Know what they actually get?

Senator KELLOGG. I mean, are you familiar with the oil fields?

Lieut. Commander RICHARDSON. I know that the Indians in Oklahoma get, in some cases, one-eighth and sometimes one-fifth.

Senator KELLOGG. What is the ordinary fee that the owners get?

Lieut. Commander RICHARDSON. It depends upon the character of the land. If it is close to a proven production, probably one-sixth; if it is wildcat land, certainly not over one-eighth.

Senator HUSTING. I would like to get back to the question of how much the Government gains by leasing, or how much better off it would be than if the Phelan amendment were adopted.

Senator SHAFROTH. Don't you take into consideration that the Government is not operating at any expense in this matter? It is getting one-eighth.

Senator HUSTING. Paying the charges and one-eighth, where the Secretary has made contracts for lands in dispute, where they apparently are made in good faith. Under the Phelan amendment we would not have been any better off, would we, than to have turned this land over to private ownership and still get one-eighth of the entire amount of oil in the field?

Senator PHELAN. In case the Government won its suit.

Senator HUSTING. In case the Government won its suit; yes.

Senator PHELAN. The Government has lost its suit, so the Navy would have been so much better off.

Senator HUSTING. I can point out as an offset to that the Government won 11 out of 11 suits. However, I do not want to argue the matter. I want to have it as a matter of record.

Lieut. Commander RICHARDSON. Yes.

Senator HUSTING. The worst that can happen to the United States, as I understand it, is this, if matters continue: There will be a loss of 20 per cent of its total oil content in all the fields; that is true?

The ACTING CHAIRMAN. Suppose we lose the title to all lands?

Senator HUSTING. That is rather a violent assumption.

The ACTING CHAIRMAN. One case has been cited.

Senator HUSTING. Yes; but the Government has won 11.

Senator STERLING. Those 11 cases were in naval reserve No. 2?

Lieut. Commander RICHARDSON. I do not know whether they are or not.

Senator PHELAN. No cases in reserve No. 2 have been decided for the Government. What cases have been decided have been against the Government.

Senator HUSTING. I do not understand that is material to this question, because the locations in the naval reserve are presented upon certain states of fact. We will now come back to the question that I had in mind. Twenty per cent is the loss that we may suffer by permitting this to go on indefinitely?

Lieut. Commander RICHARDSON. That was the statement.

Senator HUSTING. And if the Government or the Department of Justice proceeds as diligently as it can, and in the course of time puts these into receiverships, it will continue to get one-eighth of the recovery?

Lieut. Commander RICHARDSON. If put into the hands of a receiver it will be deposited in escrow, pending final determination of the title.

Senator HUSTING. When these oil wells are exhausted the Government will still be in possession of 80 per cent of all the oil?

Lieut. Commander RICHARDSON. Yes.

Senator HUSTING. Then the question of policy for the Government to determine is whether 80 per cent of the oil is better than no oil, or one-eighth of the oil; is that the consideration as you understand it?

Lieut. Commander RICHARDSON. What I said about 20 per cent is a statement of the Secretary of the Interior.

Senator HUSTING. Assuming that to be true.

Lieut. Commander RICHARDSON. Yes, sir——

Senator PHELAN (interposing). Assuming what to be true?

Senator HUSTING. Assuming the statement of the Secretary of the Interior to be true.

Lieut. Commander RICHARDSON. Considering the operation of the privately owned lands——

Senator HUSTING (interposing). Without any opposing well, it will result in a loss to the United States of 20 per cent of all the oil content in the naval reserve. Assuming that to be true, the question here then is whether 80 per cent of the content of the naval oil reserve is better than no oil at all, or one-eighth of the production, or one-eighth of the proceeds of the oil taken out of the ground and sold.

Senator PHELAN. Does that refer to the operation of the existing wells? There is nothing to prevent a private owner from conducting twice as many operations on the land, thereby increasing the drainage of other lands?

Lieut. Commander Richardson. The Secretary of the Interior stated in his letter that, "as nearly as can be estimated, the privately owned lands within and surrounding the present petroleum reserves will, when developed, result in a depletion of the supply in these reserves by not more than 20 per cent."

The Acting Chairman. But how much would that be added to, if to that were added the wells within the reserve area? He is speaking of the patented lands outside the naval reserve.

Here is a map which shows the position of the land in reserve No. 2.

These red sections are Southern Pacific lands. They constitute about half of that naval reserve.

Lieut. Commander Richardson. Yes.

The Acting Chairman. The Government is contesting the title to those lands. If the Government wins that land, at least half of the reserve will be for the benefit of the Navy. There are no wells on that land to speak of.

Secretary Daniels. They are shown there.

The Acting Chairman. They are correctly shown on the map. The black dots show the wells. They were put there by the Department of the Interior. There are a few wells being sunk on that railroad land. Unless the oil is migratory——

Secretary Daniels. Lieut. Commander Richardson tells me that there are more sunk than shown there.

The Acting Chairman. If the theory of the Navy Department is correct, that the oil is not very migratory, then there will not be so much oil drained out of those railroad lands. The Navy, under its theory of ownership of the red, would still have half the oil in that reserve. But we are not dealing with that half at all.

Secretary Daniels. If we win in the suit.

The Acting Chairman. Going on the theory of the Navy Department that the suits are well founded, following the advice of legal advisers, you own that land, which is half of the naval reserve.

Secretary Daniels. We expect to get it.

The Acting Chairman. Yes. That embraces half of the oil in that reserve. Now, we propose, if we legislate at all, to only legislate with regard to the unpatented land, which is indicated by the yellow on this map. That is only one-third of the railroad land.

Lieut. Commander Richardson. You would be legislating with regard to 2,080 acres of clear listed land.

The Acting Chairman. We would take that for the purpose of settling suits.

Lieut. Commander Richardson. 11,040 acres.

The Acting Chairman. 11,040 acres. That includes this 3,520 here [indicating], does it not?

Lieut. Commander Richardson. Yes, sir; unaffected, because it is worthless.

The Acting Chairman. Yes; it is worthless. What I am getting at is this: We are not proposing to legislate for the use of all the oil in that reserve. The whole testimony has tended to show that the Secretary believed we are going to immediately proceed to take all the oil out of that reserve. Wouldn't you prefer, if we are going to do anything at all, to take the oil only out of the yellow, instead of everything out of the reserve?

Secretary DANIELS. If you take it out of the yellow of course the Southern Pacific would immediately take it out of the red, before the litigation was finished.

The ACTING CHAIRMAN. Have you no way of stopping that?

Secretary DANIELS. Not as long as it is in litigation. That is our trouble now.

The ACTING CHAIRMAN. If these wells are to be operated, these wells in black, why won't they stimulate the Southern Pacific to take out the oil?

Secretary DANIELS. The Southern Pacific has agreed not to do that.

Lieut. Commander RICHARDSON. The Southern Pacific agreed not to drill any additional wells except offset wells.

The ACTING CHAIRMAN. I understand that.

Lieut. Commander RICHARDSON. Except offset wells. Therefore, if the unpatented lands were opened up and an active drilling campaign were begun, the Southern Pacific would be in a position to go right ahead and drill wells.

The ACTING CHAIRMAN. Could you not enjoin them?

Lieut. Commander RICHARDSON. No, sir; because they have made a request to be relieved from that agreement and permitted to start intensive drilling in that reserve.

The ACTING CHAIRMAN. To whom did they make application?

Lieut. Commander RICHARDSON. To Judge Bledsoe, the court.

The ACTING CHAIRMAN. The court would reserve the oil pending the litigation?

Lieut. Commander RICHARDSON. He would not.

The ACTING CHAIRMAN. On what ground?

Lieut. Commander RICHARDSON. I have a statement of what he said. What he did do was to fail to release them from their gentleman's agreement, but he stated, before he would permit the railroad's traffic to be interrupted by the shortage of oil or by their inability to buy at a fair price, he would permit intensive drilling, and that while they have not conclusively proven to him that the necessity now exists, they could, if they desired, go ahead and drill those wells, contrary to their former gentlemen's agreement—drill them down almost to the oil formation, and be ready to drill them into the oil formation in case it became necessary to do so in order to provide oil to move the trains. They are now drilling some of those wells.

The ACTING CHAIRMAN. In other words, they are drilling wells on the red?

Lieut. Commander RICHARDSON. They are.

The ACTING CHAIRMAN. Then they are going to increase the depletion of the reserve through the red section?

Lieut. Commander RICHARDSON. But they are not going to drill any wells on the red on the Southern Pacific lands that are not offset by other wells.

The ACTING CHAIRMAN. But they are going to deplete the naval reserve.

Lieut. Commander RICHARDSON. They are going to deplete the naval reserve and deplete the railroad lands, if necessary.

The ACTING CHAIRMAN. The railroad lands?

Lieut. Commander RICHARDSON. Yes, sir; if necessary.

The ACTING CHAIRMAN. What I am trying to get at is this practical question. The Government claims all the land in that naval reserve, and the Attorney General, and counsel of the Government, have advised that the Government owns it, in their opinion. This committee has never proposed to deal with anything except the land in yellow, the clearlisted land, the unpatented land. That is all it has ever intended to do. That is less than half of the reserve. If the Government is right, this committee should recommend, and Congress should adopt, a leasing bill for the unpatented land. It would simply mean the production for the Navy of oil on half of it, and a reserve of the other half.

Secretary DANIELS. To whom do you propose to lease it?

The ACTING CHAIRMAN. That is a question that we are not considering at all. We have considered it in the past, but at the present time we have not reached that stage. We are simply considering the question as to whether or not it is necessary to develop that land.

Secretary DANIELS. If it is, I think the courts ought to develop it, or the money should be given to the Navy to develop it, and it should not be turned over to people who have no legal claims.

The ACTING CHAIRMAN. Can you suggest a way by which it can be done?

Secretary DANIELS. I have no doubt if Congress gives it to people——

The ACTING CHAIRMAN (interposing). As I have stated before, Congress has no way of determining the legality of the claims.

Secretary DANIELS. That is the reason why I say it should be left to the courts.

The ACTING CHAIRMAN. Then you would not do away with the law's delay by compromise?

Secretary DANIELS. I think we should first see if these lands should be developed, and then the Government should develop them, or it should be done in the same way as it is in Indian territory; that is, they should be advertised and the best possible terms be made.

The ACTING CHAIRMAN. That is another question. It has been testified before this committee by experts that it is essential to continue the operation of the wells.

Secretary DANIELS. The courts are doing that.

The ACTING CHAIRMAN. The experts have agreed on that.

Secretary DANIELS. That is true.

The ACTING CHAIRMAN. If you observe that land marked by yellow you will see wells struck down all over it.

Secretary DANIELS. Yes.

The ACTING CHAIRMAN. It would be impossible to take, for instance, section 28 and consider that as a permanent oil reservoir.

Secretary DANIELS. Yes. If it were one reserve it would be reasonable.

The ACTING CHAIRMAN. In the future, I mean, with all the wells plugged down on it——

Secretary DANIELS (interposing). You might preserve that in the corner there.

The ACTING CHAIRMAN. You might preserve a quarter section.

Secretary DANIELS. You might preserve a quarter section and take the other out, as you needed it.

The ACTING CHAIRMAN. Take section 34, for instance. You notice the wells plugged down on that section.

Secretary DANIELS. You could reserve more.

The ACTING CHAIRMAN. If the theories of the experts are correct, that the wells having penetrated oil, it is necessary to continue, you would not consider section 34 as a permanent reservoir to hold oil?

Secretary DANIELS. You would take out all that it was wise to take out, and the other you would hold.

The ACTING CHAIRMAN. How would you hold it?

Secretary DANIELS. Not dig any wells.

The ACTING CHAIRMAN. These wells are not only draining oil but are releasing gas pressure.

Secretary DANIELS. Yes; to some extent.

The ACTING CHAIRMAN. As a matter of fact, don't you realize that all the experts have testified that the operation of the wells would release the gas pressure and the oil to such an extent that the flow would decrease, and that would be quite an expensive proposition thereafter?

Secretary DANIELS. Wherever that is true, we utilize them now.

The ACTING CHAIRMAN. Here are sections 28 and 34 [indicating on map]. Here [indicating] is 22. The lower half of section 22, which is part unpatented land, is in yellow. There are 12 wells shown upon it. There are 2 on the upper half of 22, or 14 new wells. Certainly, the lower half of 22 could not be considered as in condition to be a permanent reservoir for oil.

Secretary DANIELS. At present the court is operating those wells. Where it is wise to do so the oil should be used, and the other should be preserved.

The ACTING CHAIRMAN. They have to operate them; I realize that. It is perfectly proper. They must be operated. For that very reason it is impossible to consider it as a permanent reservoir.

Secretary DANIELS. Part of it; yes.

The ACTING CHAIRMAN. Take, for instance, 26; the south quarter section of 26 is patented land. It is covered with wells. The southeast quarter section of 26 has a number of wells. They are scattered so as to affect the whole section.

Secretary DANIELS. Well, what would you advise should be done, Senator?

The ACTING CHAIRMAN. I do not believe that section 26 would be a good reservoir. I think it is a poor proposition.

Secretary DANIELS. It should be operated from time to time as it seems wise to do so.

The ACTING CHAIRMAN. Take section 2. It corners on section 30, which is State land, a patented section. They are taking oil from around it. On section 1, next to it, they have found several wells. They have nine wells on the upper half of section 2.

Secretary DANIELS. There has been no suggestion that we should tie up that part of the oil reserve that can not be wisely reserved, but that it should be utilized for the Navy and not for parties who have no legal claims.

The ACTING CHAIRMAN. What I am trying to get at is this: It is apparent that the unpatented lands in that naval reserve are hardly in condition to be permanent reserves. We have got to consider some plan for permanent reserves.

Secretary DANIELS. Look at No. 6.

The **Acting Chairman.** Section 6 is in better shape than the rest. It has only seven wells on it. That is in much better shape than the others.

Secretary **Daniels.** Then there are 31, 32, 5, 6, 7, 8, 17, and 18.

The **Acting Chairman.** Eighteen is a half section. The lower half section is patented land, unassailable title. It has six wells on it.

Secretary **Daniels.** It is a very good reserve.

The **Acting Chairman.** No. 18, you think, is a good reserve?

Secretary **Daniels.** Yes; the whole reserve is a good one.

Lieut. Commander **Richardson.** There is a dip through there by which No. 18 could not drain No. 7.

The **Acting Chairman.** The bottom part of No. 18 is patented land. Could it drain the upper half of 18?

Lieut. Commander **Richardson.** According to the figures that is nonproductive.

Senator **Walsh.** That is quite obvious from the few wells.

The **Acting Chairman.** That being nonproductive, we will eliminate that from consideration.

Lieut. Commander **Richardson.** Right north of 31 and 32, just down at the bottom of 17 and 18, the wells outside of the area could not drain from the inside area. I think it would be a good reserve, because you have only to drill wells east and west to protect them from draining.

The **Acting Chairman.** I am not going to be captious about it. What I am trying to get at is this: I am trying to show how much land we will have as a permanent reserve that we should eliminate from this bill.

There is a quarter section in 28; there is a half section in 22; there is a possible half section in 26; there are half sections in 34, 12, and 6. We might consider that they would be permanent reserves.

Secretary **Daniels.** We may consider that a large portion may be a reserve, and a portion may not be a good reserve, and that that portion that can not be made a good reserve be worked as it is now. Therefore, we are not locking it up. We are letting a portion out now, when it can not be preserved wisely. If we win the Southern Pacific suit, that will tremendously increase the value of the oil reserves.

The **Acting Chairman.** We are not attempting to deal, in any bill we may pass, with the Southern Pacific lands.

Secretary **Daniels.** We must look at those lands because if we win those suits it will help all the others.

The **Acting Chairman.** We are treating the matter as though you had won. If that is the case, you have one-half undisturbed by Congress.

Secretary **Daniels.** You increase the value of each of the others, because they can not be drained.

The **Acting Chairman.** Now, as to the unpatented land, it is admitted that a large portion, marked in yellow, which is unfit for permanent reserve, is being worked now.

Secretary **Daniels.** In green.

Lieut. Commander **Richardson.** And the green.

The ACTING CHAIRMAN. And the green. Of course, I have not thought so much about the Honolulu Co. case. I was not speaking so much about that. That has gone to clear list.

Secretary DANIELS. That is in litigation.

The ACTING CHAIRMAN. What I am getting at is that this yellow section that is now being operated must continue to be operated.

Secretary DANIELS. Some portions; yes.

The ACTING CHAIRMAN. The only question is, not being a permanent reserve, should operations be increased?

Secretary DANIELS. No, they should not be increased; but they should be continued, as we are doing now.

The ACTING CHAIRMAN. Why should you not increase operations, when you need oil and you do not intend to utilize it as a permanent reserve?

Secretary DANIELS. We would prefer to hold the matter exactly as it is, operating wherever we can not wisely reserve.

The ACTING CHAIRMAN. But, if you need the oil and you do not intend to use the land for a permanent reserve, why not take the oil out?

Secretary DANIELS. If I take it out, I wish to take it out myself.

The ACTING CHAIRMAN. Would you take it out yourself if you could?

Secretary DANIELS. Yes, sir; wherever it is deemed wise.

The ACTING CHAIRMAN. You would increase the production?

Secretary DANIELS. Not unless I was losing without doing it.

The ACTING CHAIRMAN. If you needed oil and thought it was depreciating?

Secretary DANIELS. Yes, sir.

The ACTING CHAIRMAN. If you can not do it legally yourself, and it can be done through a leasing system, would not you desire it?

Secretary DANIELS. Not by giving it to parties who have no legal claims. That is pretty good reserve. When we get the Southern Pacific land, which is a splendid reserve, I would not surrender any of it. I would not surrender any that is good reserve. I would operate the balance as wise judgment indicated best.

Senator HUSTING. If you acceded to it, and said it was all right, and Congress passed a law throwing this yellow land open to entry, and then the Government should prevail in its suits, would they then not say that the red squares would be no good because of the many oil wells in operation on the yellow squares?

Secretary DANIELS. Yes, sir.

Senator STERLING. Let us take a recess. I move that we recess until Monday.

Senator HUSTING. How long will it take for the Navy to be converted into an oil-burning Navy?

Secretary DANIELS. Well, we are building nothing but oil burners now.

Senator HUSTING. In what length of time do you figure practically the entire Navy will be dependent upon oil?

Secretary DANIELS. I would not like to put that into the record.

Senator HUSTING. I would like to ask how much oil it is estimated will be required annually for the oil-burning Navy, when the time comes that the Navy is practically dependent upon oil?

Secretary DANIELS. I have a statement, gentlemen, that I will put into the hearing which gives many of those facts. For the fiscal year ending June 30, 1918, we will need 5,000,000 barrels, if at war. For the fiscal year ending June 30, 1919, we will need 8,635,000 barrels, if at war. Those are pure estimates.

Senator HUSTING. We are at war now.

Secretary DANIELS. I know that we are at war, but the Navy is not using oil on the basis of actual war conditions.

Senator HUSTING. Do you know how many aeroplanes are going to be built?

Secretary DANIELS. I think there is a bill pending for $600,000,000 worth. That does not include the Navy at all; that is the Army.

Senator HUSTING. Will you be kind enough to furnish an estimate as to the requirements for these aeroplanes that are about to be built?

Secretary DANIELS. I will do so.

Senator KELLOGG. Is there any estimate of what this country will need in the next two years?

Secretary DANIELS. It would be difficult to answer that question. It is largely a matter of guess.

Senator KELLOGG. When you make an estimate, you have got to make an estimate of what the allies need, not only for aeroplanes and for the Navy, but for transportation at the front.

Secretary DANIELS. Yes. That is an estimate that it is impossible to make at this time.

Senator KELLOGG. It is just as important to supply oil to the allies as ourselves?

Secretary DANIELS. Yes.

Senator STERLING. Are coal-burning vessels being changed into oil burners?

Secretary DANIELS. No.

Senator STERLING. Is that contemplated?

Secretary DANIELS. It is very difficult to do, and very expensive to change the construction from coal to oil. I am referring now to men-of-war. It will be quite a serious thing to do it. We will have to continue for years with these coal-burning ships. All our new ships, built in the last few years, have been oil.

Senator KELLOGG. It would not be safe for this country to make preparations on any basis but that of supplying the allies and ourselves with gasoline and oil sufficient for a two-years' war? No one can tell anything about that, I suppose?

Secretary DANIELS. I would answer that question like Gen. Joffre answered a similar one, according to a story that I heard. Some one asked him how long the war was going to last, and he turned to his chauffeur and said, "Tell the gentleman how long the war will last."

Senator KELLOGG. This Government should make preparations for a supply equal to the demand?

Secretary DANIELS. Yes. Mexico and America must furnish the bulk of it.

Senator KELLOGG. You think the emergency is increasing?

Secretary DANIELS. The conditions, if the war lasts two or three years, will become more acute. They will be more acute next year than this. Therefore, we should hold some for the emergency.

Senator **Kellogg**. You can not make adequate preparations to use oil and procure from it fuel oil and gasoline in a few months, can you?

Secretary **Daniels**. Not in a few months, but the worst possible thing we could do would be to burn for commercial purposes in the next year the oil in these reserves, which are the only places we can hold for future needs.

Senator **Husting**. Mr. Secretary, I would like to get your thought in this respect: What do you consider the safe way to act now in regard to the naval oil reserves, considering the needs of the Navy in this emergency, in view of the fact that we are building a fleet of oil-burning ships?

Secretary **Daniels**. As long as possible, we should buy it and hold in the ground all that can be held in the ground, until the emergency is greater than now.

Senator **Husting**. Can coal-burning ships be quickly and easily converted into oil-burning ships?

Secretary **Daniels**. Not the naval ships.

Senator **Husting**. That is what I have reference to.

Secretary **Daniels**. No, sir; it is a very expensive proposition, and a very difficult one.

Senator **Husting**. What would be necessary to be done to take oil-burning apparatus out and install coal burners?

Secretary **Daniels**. I would rather put that in the record. I would not like to say just what would be necessary.

Senator **Husting**. Can it be readily, quickly, and inexpensively done, or do you have, practically, to rebuild the whole ship?

Secretary **Daniels**. You have to rebuild very much of it.

Senator **Husting**. Can you give us any closer information on that?

Secretary **Daniels**. I would like to get the figures from experts about that. I will put them in the hearings.

Senator **Husting**. In the event we should continue to build oil-burning ships, and the increase continues at the same ratio it has continued during the past year, I would like to have you put into the record just what effect it would have upon the efficiency of the Navy; whether we would have sufficient dry docking to rebuild our our ships or convert them into oil burners, and what length of time it would take to convert the Navy into an oil-burning Navy.

Secretary **Daniels**. I will furnish those figures. I would not like to hazard a guess. There is a great difference in the steaming radius of ships when they use oil and when they use coal. Oil has many advantages, and it would put our Navy at a great disadvantage as compared with the navies of the rest of the world if we should go back to the use of coal.

(The matter relating to changing coal-burning to oil-burning ships referred to by Secretary Daniels is here printed, as follows:)

CONVERTING OIL BURNING TO COAL BURNING.

Submarines.—These are all equipped with internal-combustion engines and conversion to coal burning is impossible.

Battle cruisers, scout cruisers, and destroyers.—The armor and armament of these classes of vessels is very light and their principal tactical value lies in their speed. Battle cruisers, scout cruisers, and detroyers built for oil burning would become obsolete in case the supply of oil should become exhausted and their conversion to coal burners need not be considered. They can not be built so as to be readily convertible to coal burning without sacrificing so many qualities as to make their construction unwarranted.

Battleships.—Converting into coal burners would involve the rebuilding of the machinery and bunker spaces and probably of the entire inner structure of the vessel. Oil can be readily pumped from one compartment to another and fuel tanks are located in otherwise unavailable compartments of the ship. Converting to coal burning would not only involve relocation of the boilers but the construction of bunkers adjacent to the boilers. The size of the boilers must be materially increased or the speed of the ship will be reduced. The working space in front of the boilers must also be increased, as boiler fronts and bulkheads are too close together to permit of working of coal fires. The vast difficulties to be overcome can be seen from the length of fireroom spaces assigned to the *New York*, the last coal-burning battleship, and the *Oklahoma*, the first oil-burning battleship.

Length of fireroom space.—*New York*, 128 feet; *Oklahoma*, 66 feet.

Accurate determination of the alterations necessary and cost thereof would involve a careful study of policy of the relative amounts to be sacrificed in speed, cruising radius, and gun power. At least two of these would be greatly reduced. It would be necessary to remove one or more turrets if the machinery space was to be increased.

The cost of converting to coal burner would be practically one-half the original cost of hull and machinery; and the time to make the alterations would be at least nine months to a year after material was assembled.

If all navy yards were utilized in converting these ships, work could be carried on simultaneously on 14 ships at one time in addition to other yard activities.

Auxiliaries.—Auxiliaries are being built so that they can be readily converted from oil burners to coal burners in a few days. This is possible on this type of vessels, as the military characteristics do not limit the space that can be assigned to firerooms and bunkers.

Finally.—These changes as outlined would reduce the military characteristics of our Navy to such an extent as to place our Navy at the greatest disadvantage compared to any other navy of similar tonnage.

Senator HUSTING. It has been testified by Mr. Requa, I think, that if we continued to consume oil in the ratio we have in the past 10 years, or with an increased ratio, the possible supply of oil in known oil fields will be consumed in 15 years. I would like to have you state now, or if you can not, put into the record what the situation of the Navy would be 15 years from now if the oil supply should at that time be used up.

Senator KELLOGG. Is it not better to be without oil 15 years from now than lose the war?

Senator HUSTING. I do not assume for a moment that we are going to preserve the oil supplies and lose the war. We will do anything in order to save the country.

Secretary DANIELS. Of course we would have to scrap the Navy or make it a coal-burning Navy.

Senator HUSTING. How long would it take to do it, and would we have dry dockage enough to do it? Further, is it a practical or possible thing to do, except in a very long period of years?

Secretary DANIELS. It is neither practicable nor wise.

The ACTING CHAIRMAN. How long would the unpatented lands or the oil in the land in naval reserve No. 2 last the Navy?

Lieut. Commander RICHARDSON. It would take 20 years or more to get the oil out.

The ACTING CHAIRMAN. It would take 20 years or more?

Lieut. Commander RICHARDSON. You can not get that oil in 20 years.

The **Acting Chairman**. There is no danger of getting it out in a year.

Lieut. Commander **Richardson**. You can not get it as fast as you need it.

The **Acting Chairman**. There is no legislation that we could pass with regard to that reserve that would destroy the reserve.

Secretary **Daniels**. If you take it away you have lost it.

Lieut. Commander **Richardson**. I should say that you would destroy its value as a naval reserve if you give it to somebody else.

Senator **Kellogg**. Who proposes to do that?

Secretary **Daniels**. The bill does that.

The **Acting Chairman**. The question is, What will be the effect on the Navy if the oil is taken out of the reserve? The Senator from Wisconsin was dealing with the question that if the oil in the country were to be exhausted in a certain number of years, we would have to go back to coal burners.

Senator **Husting**. I say that that is the testimony.

The **Acting Chairman**. That is the theory you are discussing?

Senator **Husting**. Yes.

The **Acting Chairman**. How much longer would the Navy be able to use oil burners if it possessed the oil in these unpatented sections?

Secretary **Daniels**. I can figure it out roughly.

The **Acting Chairman**. I want to know how much longer we would be saved by that.

Lieut. Commander **Richardson**. That land alone, if we used only that percentage of oil that should be used for fuel, and took out the gasoline, the kerosene and lubricating stock would last about seven years.

The **Acting Chairman**. How many gallons do you estimate are in that naval reserve No. 2?

Lieut. Commander **Richardson**. I do not estimate at all. I quoted the figures of 380,000,000 barrels.

The **Acting Chairman**. 380,000,000 barrels? What portion of it is proposed to be affected by this bill?

Lieut. Commander **Richardson**. 130,000,000 barrels.

The **Acting Chairman**. One hundred and thirty million barrels. What proportion of the whole reserve do you say is affected by this bill—what percentage?

Lieut. Commander **Richardson**. About 11,040 acres. That would actually be affected.

The **Acting Chairman**. We are discussing now that unaffected. There have been 100,000,000 barrels already taken out of the reserve?

Lieut. Commander **Richardson**. Yes.

The **Acting Chairman**. That leaves 280,000,000 barrels?

Lieut. Commander **Richardson**. That was the estimate, 380,000,000 barrels, made by Mr. Williams at the time. That much remained in December, 1916. All these figures are printed in the hearings on House bill 406. They were furnished by the Department of the Interior.

The **Acting Chairman**. And leaves 280,000,000 barrels in there.

Lieut. Commander **Richardson**. At that time there were 380,000,000.

The **Acting Chairman**. It is less now. One-quarter of the oil in that reserve is supposed to be affected by this bill. That is 90,000,000 barrels?

Lieut. Commander **Richardson**. No, sir. 130,000,000.

The **Acting Chairman**. How do you get that with a total of 380,000,000?

Lieut. Commander **Richardson**. Because you take the land when you say one-quarter and you take the oil when you say 130,000,000.

The **Acting Chairman**. Where do you get that 130,000,000?

Lieut. Commander **Richardson**. I got it from the hearings on this bill, a special joint conference of the Committees on Public Lands, United States Congress, of which you were chairman. The figures are shown on page 69. The figures were prepared by Mr. W. A. Williams, then of the Bureau of Mines, and were furnished by Mr. Commissioner Tallman.

The **Acting Chairman**. There are 130,000,000 barrels in the unpatented lands?

Lieut. Commander **Richardson**. Yes, sir. You add 36,000,000 barrels on the Honolulu clearlisted lands, 4,400,000 on the unentered lands, 90,000,000 barrels on the claimed and unpatented lands, giving a total of 130,400,000.

The **Acting Chairman**. That figure would last for seven years?

Lieut. Commander **Richardson**. I believe, if you desire to utilize that fuel in the most efficient manner, conserving the valuable parts, you would only get 30 per cent as fuel. You would use part as lubricating oil, so that the fuel oil alone would be, roughly, about 40,000,000 barrels.

The **Acting Chairman**. The Secretary has testified that we will need 12,000,000 barrels a year after seven or eight years.

Lieut. Commander **Richardson**. More than seven years.

The **Acting Chairman**. Then it would not last seven years.

Lieut. Commander **Richardson**. I did not figure that we were going to postpone using that until consumption had increased to 12,000,000 barrels, because it would not be twelve millions for a long time.

The **Acting Chairman**. It is apparent, Lieut. Commander Richardson, that if we keep on using from the existing wells on that unpatented land, that the unpatented land as a permanent reservoir would not continue the existence of the Navy as an oil-burning navy any appreciable time at all.

Lieut. Commander **Richardson**. I think it would.

The **Acting Chairman**. I can not see how it would. If we are going to continue to use from the existing wells this amount of oil, I do not see how it will work. I do not see how there would be any oil for the Navy at the end of 10 or 12 years, when the oil would be exhausted, according to Mr. Requa's testimony. I can not see the importance of the reserve under those conditions.

Lieut. Commander **Richardson**. You can not go and get it right away. You can not go and tap them and draw it off rapidly. It would take 25 years to get it out.

Senator **Kellogg**. If that is the case, I will suggest to the Secretary that it might be wise for the various departments of the Government having information in regard to this matter to make estimates of the needs of the allies and of what this country and Mexico can shortly produce and furnish, so that we can get some idea whether we are safe without increasing the production of oil in order to carry on the war. I may be wrong about this, but to my mind the main thing is to see whether we are going to have oil enough to meet our needs in the next few years. I do not wish the Secretary to draw the conclusion that I believe in giving up any of the Government's interests by anything I have said in this matter.

(At this point informal discussion followed, which the reporter was directed not to take.)

Secretary DANIELS. I wish to say that the bill (S. 43) that Senator Walsh proposes makes the date of initiation 1910, whereas the President's order was September 7, 1909. I insist that everyone who entered after the President's order of 1909 was a trespasser, and he has no rights except those that the courts will give him. If Congress should pass any bill, that should be the date.

I desire also to call attention to the fact that after the President's order was issued in 1909 there was complaint in California that President Taft's order had dealt unjustly and harshly with men who were in good faith prosecuting their claims. So this matter had a full hearing in 1910, and the oil men from California were heard and said that this order bore heavily upon them, and at their request, as you will see by reading the testimony, they——

Senator KELLOGG (interposing). The Supreme Court has disposed of everybody's claim that originated after the act was drawn?

Senator HUSTING. The Pickett Act was to dispose of an injustice.

Senator WALSH. I should say here that I am not to be understood as urging any consideration for the bill that bears my name (S. 43). I merely desire to say, in connection with that, that before I was acquainted with the situation as well as I am to-day, upon representations made to me concerning the situation of affairs, I introduced a bill on the subject which has had no attention from me since. The bills that were not disposed of at the commencement of the present session bearing my name were prepared for me and thus introduced. I want you to understand that the bill to which I have just referred does not represent my views about this matter at all.

Secretary DANIELS. Of course, I do not know what the information before the committee is. We are, all of us, trying to find where we can get oil. The great need is for oil. Of course, at first blush the people say, "Let us get the oil that is the easiest to get. This oil having been set aside for the purposes of the Navy, I say we should not take that until we have taken the balance of the oil in California. If you finally decide, in view of the emergency, that the interests of the Navy must be sacrificed and the Navy be set aside, then these lands should be put up at auction and the men who will pay the Navy or the Government the highest price for operating wells should be allowed to operate, subject, of course, to the legal rights of the parties who claim ownership.

Senator KELLOGG. That is, those whose claims were, before the withdrawal, bona fide in every way.

Secretary DANIELS. Yes. The Pickett Act covers everybody.

Senator WALSH. But, Mr. Secretary, it is suggested by the commander that instead of carrying on this litigation indefinitely it might be wise to effect a compromise and clear up the trouble.

Secretary **DANIELS**. There has been no compromise suggested.

Senator **WALSH**. The compromise suggested is the amendment proposed to this bill.

Secretary **DANIELS**. Well, I do not think that is a compromise that is just to the Navy.

Senator **WALSH**. Have you any suggestion to make as to whether it is wise to compromise at all or whether it is your idea that litigation should go on, and if you then fail that the compromise should be made upon terms other than those suggested?

Secretary **DANIELS**. Last year a committee of the oil producers came to see me, and, as Senator Pittman knows, I suggested a compromise by which the wells already opened should be continued. I have forgotten the exact terms of that.

Senator **HUSTING**. Mr. Secretary, you feel, as I understand it, that the Pickett Act covers all cases where it was apparent that injustice would be done by invoking the letter of the President's order?

Secretary **DANIELS**. I do.

Senator **HUSTING**. And that whoever has a valid claim now has a remedy in court?

Secretary **DANIELS**. Yes, sir.

Senator **HUSTING**. And that oil land having been set aside as a naval reserve for the Navy, you feel, as far as they are concerned, that that is a matter beyond compromise?

Secretary **DANIELS**. I do not feel that we should turn this land over to men who have no legal rights.

Senator **HUSTING**. You do not feel that the Government is justified in trying to settle a controversy where the legal rights of the Navy have been established by law and where the contestants can not find a remedy without additional legislation giving them rights which they do not now possess?

Secretary **DANIELS**. No; I do not think so.

Senator **WALSH**. There are two situations that always confront a man in a lawsuit. One is to fight it out to the bitter end, and the other is to settle upon some basis. I suppose the Senator from Wisconsin will recognize that.

Senator **HUSTING**. Oh, yes, sir.

Secretary **DANIELS**. That should be done.

Senator **WALSH**. In this particular instance we should determine whether it is wisest to fight it out to the end, or whether the other policy would be a wise one to pursue. If a compromise would be a wise policy, we should then endeavor to arrange upon some fair terms of compromise. We should not deceive ourselves about the matter. That is the situation. There are two policies, and it is a question which one should be adopted.

Senator **HUSTING**. Of course, while I am in favor of compromising lawsuits, I think there should be some color to a claim. Anybody can set up a claim against the Government. When it is apparent that the claim is necessarily founded on wrong, I do not think it should be treated with consideration.

Senator **KELLOGG**. Suppose claimants have valid locations.

Senator **HUSTING**. Those who have earned valid locations are covered by the Pickett Act.

Secretary **Daniels**. Here is a map that I think will probably throw some light upon the point. The point is that at present we have no reason to open the naval reserve. We have so much other land in California—withdrawn land—that ought to be used first before we think about this.

Lieut. Commander **Richardson**. This is a statement showing the proven, unpatented, withdrawn lands outside of naval petroleum reserve, some of which is as good as that in the naval petroleum reserve. It amounts to 15,360 acres.

Senator **Kellogg**. Government land?

Lieut. Commander **Richardson**. Government lands withdrawn at the same time the naval petroleum reserves were withdrawn, in the same order. Part of that is in suit.

Senator **Kellogg**. Are there known mineral lands?

Lieut. Commander **Richardson**. Absolutely producing oil. Some of it is good.

Mr. **Gillett**. May I say a word in that connection?

The **Acting Chairman**. Yes.

Mr. **Gillett**. You will find lands there that lie south of naval reserve No. 2. That land has been highly developed. While there may be more oil obtained, it is speckled all over with wells. While there may be a small increase, it can only be a small increase. That acreage amounts to 15,360 acres. That was the first developed land. If you take that map that you have there before you, you will see right down there [indicating] that that land is spotted with wells. While it is true that you may get more production than now, it would not be great. The wells will not keep up with the production that is required when you talk about supplying the country. You can get oil, it is true, but not much.

Lieut. Commander **Richardson**. The first day I appeared at the hearing on this bill it was made to appear that evidently many people were assuming that the only hope of California was the opening up of the naval petroleum reserve. I said to Mr. Requa, who is well acquainted with California and who says he has no interests there—and I believe him—"They are making it appear as though the only hope of California was the opening up of the naval petroleum reservation." He said, "You notice that I very carefully stated that the land that should be opened up was within the withdrawn area?"

Senator **Walsh**. His testimony is in the record?

Lieut. Commander **Richardson**. Yes, sir.

Senator **Husting**. He stated that he had carefully refrained from stating it was in the naval reserve?

Lieut. Commander **Richardson**. I said, "It is made to appear that the land that must be opened up is in the naval petroleum reserve, as though that were the only hope"; and he said, "You were careful to note that I stated it was within the withdrawn area."

Senator **Husting**. Is that in the record?

Lieut. Commander **Richardson**. It is in the record that he stated it was the withdrawn area. It is not in the record that he stated that it was in the naval petroleum reserve.

Senator **Husting**. Senator Walsh says that he did not mean to include the naval reserve in the statement of withdrawn areas.

Lieut. Commander RICHARDSON. He did mean that. He meant all of it—the naval petroleum reserve and others, but he did not intend to convey the impression that the naval petroleum reserve was the sole area.

The ACTING CHAIRMAN. Have you consulted with your counsel, or counsel of the department, with regard to the recent decision involving section 2 of that reserve?

Secretary DANIELS. No; I have not. It has only been recently received. I do not think we have yet received it.

The ACTING CHAIRMAN. The reason I ask is this: We have put it into the record. The Federal court has decided, on the questions submitted, that the claimants are entitled to the whole section. It involves that very question that you had in mind a while ago of initiating rights with due diligence under the Pickett Act. The decision goes further, I believe, than any other California decision.

Secretary DANIELS. Whose decision is it?

The ACTING CHAIRMAN. Judge Bean's.

It is held that continuous work is not required; that actual work on the ground is not required, that any work intended to make a discovery of oil which would, in fact, tend to the discovery of oil, was work anticipated under the Pickett Act; and that a cessation of labor for a period of time could not be considered abandonment, if the parties subsequently went back and continued operations to a discovery. It practically eliminates the question of diligence after they have gone back on the ground. I will read from near the end of the opinion. In the first place, he says [reading]:

> A statement in general terms of the conditions applicable to all cases arising under this act, and which should govern in determining whether the requisite diligence existed, is difficult, if not impossible. What constitutes diligent prosecution of work does not lend itself to exact definition. Diligence is a relative term, and what is due diligence in a given case must be determined by the circumstances. Chief Justice Lewis, in Mining Co. *v.* Carpenter (5 Nev. 546), says that it "is that constancy or steadiness of purpose which is usual with men engaged in like enterprise. Such assiduity in the prosecution of the enterprise as will manifest to the world a bona fide intention to complete it within a reasonable time. It is the doing of an act or series of acts with all practicable expedition, with no delay except such as may be incident to the work itself," and that "the law does not require an unusual or extraordinary effort, but only that which is usual, ordinary, and reasonable * * *."
>
> To bring an occupant or claimant of oil or gas bearing lands within the provisions of the Pickett Act it is not necessary that he was engaged in actual drilling for oil or gas on a particular tract at the date of withdrawal (U. S. *v.* Grass Creek O. & G. Co., 236 Fed. 481), or necessarily that work was then being performed upon the identical claim upon which discovery must ultimately be made in order to make location. It is enough if reasonable effort was being made at that time indicating a bona fide intention to complete the work of discovery on the particular claim with all practical expedition, such intention being manifested by the doing of physical act or acts which had a direct tendency to facilitate the exploration for and discovery of oil or gas thereon, although drilling had not commenced and the work may not have been on such claim. (Smelting Co. *v.* Kemp, 104 U. S., 636; U. S. *v.* Thirty-Two Oil Cos., just decided; U. S. *v.* Ohio Oil Co., 240 Fed. 996.)
>
> Diligent prosecution of work leading to discovery upon a mining claim depends so largely upon the physical conditions of the locality, the nature and situation of the region, its accessibility, the magnitude of the work, the difficulty of securing material and supplies, and the like, that each case must rest largely on its own facts and circumstances, and a decision in one is of but little assistance in another. Since, however, the law does not require any unusual or extraordinary effort, but only that which is usual, ordinary, and reasonable

under the circumstances, I am of the opinion that the oil company was in diligent prosecution of work leading to discovery at the date of the withdrawal within the meaning of the Pickett Act.

It was when overtaken by the withdrawal, and for months before had been in occupation of each claim engaged in work necessary and proper in order to effect a discovery thereon, with the then present bona fide purpose of completing such work with all reasonable expedition, and was at the date of the withdrawal doing all that could reasonably and justly be expected of it under the circumstnces. The law does not require a vain or useless thing to be done, and therefore the oil company was not required by the law of diligence to have installed all its machinery or commenced drilling before its supply of water was such that it could reasonably hope to successfully continue the work. Nor was it required to make any unusual or extraordinary effort to obtain water, but only such as was reasonable under the circumstances confronting it. Its possession, the work which it had done and was then doing, were such that it would have been protected by the courts from intrusion by private parties if the order had not been made. (Cosmos *v.* Eagle Hill, 112 Fed., 4; McLemore *v.* Express, 112 Pac., 59; Miller *v.* Chrisman, 73 Pac., 417; Rooney *v.* Barnette. 200 Fed., 700.) And I take it as the true test in cases of this character.

It is contended, however, on behalf of the Government, that even if the oil company was in diligent prosecution of work leading to discovery at the date of the withdrawal, such diligence was not continuous thereafter. I do not think it necessary to carefully weigh the testimony on that point. The evidence shows that the oil company and its successors in interest never abandoned, nor intended to abandon, the property, but remained in possession, proceeding with the work of development in good faith, with more or less diligence, until the actual discovery of oil.

Discoveries had been made and oil developed on each claim prior to the commencement of these suits, at an aggregate expense of more half a million dollars, and it is now too late, in my opinion, for the Government to question the defendants' right to the possession and to the oil contents, because it may be that at some time during the progress of their work since the withdrawal and prior to discovery they were not as diligent as they could have been. It is true the Pickett Act provides that the right of bona fide occupant or claimant at the date of a withdrawal order, and who was at such time in diligent prosecution of "work leading to discovery," shall not be impaired or affected so long as such occupant or claimant shall continue in diligent prosecution of "said work," referring logically to work leading to discovery, thus implying that when discovery is made his right shall no longer continue. It can not be supposed, however, that Congress intended any such result. The duty therefore devolved upon the court to search out the true meaning of the law, and to permit the spirit and reason to prevail over the letter. (U. S. *v.* Mulvey, 232 Fed., 513; Holy Trinity *v.* U. S., 143 U. S., 457.) And so construed, it conferred upon an occupant or claimant of withdrawn land, who is within its provisions, the right to continue his work to a discovery, and the benefit thereof, as if the land had not been withdrawn, with the same right in the Government to reenter, if the diligence was not continuous, as a private citizen would have had if the land had not been withdrawn.

The history of this and subsequent legislation, it seems to me, confirms this view. (See act of March 2, 1911, 36 Stat., 1015.) Anomalous as it may seem, public land containing pertoleum or other mineral oil and chiefly valuable therefor could, at date of withdrawal order, have been entered and patent obtained only under the placer-mining law. (29 Stat., 526.) No location of a placer claim valid against the Government could have been made until the discovery of mineral within the limits of the claim. (R. S., sec. 2320-2329.) * * * But the question is not material, I take it, where the required diligence existed at the date of withdrawal, and there has been no subsequent abandonment of the claim, but possession retained and actual discovery made prior to reentry by the Government or the commencement of an ouster suit.

The Government has lost section 2 at the present date.

Secretary DANIELS. Has the Government appealed that case?

The ACTING CHAIRMAN. I do not know. That is a case where the Government might consider a compromise for its own benefit.

Secretary DANIELS. That is a reversal of some other decision.

The **Acting Chairman**. I think it is, to a certain extent.

Secretary **Daniels**. I would not presume to say it is good law or bad law. I have read decisions the other way, but I would request the committee to get the opinion of the Attorney General on that. He would not come up with reference to bill 45, because that is a bill in which he had no interest, but upon these other matters it is my opinion that the Attorney General should be asked to appear before the committee. This question and collateral questions might be discussed. I am not competent to pass upon the law, or a question of law.

The **Acting Chairman**. Has the committee anything further to ask the Secretary?

Senator **Husting**. In connection with the offer to place that case in the record, I would like to put a list of the cases in the record which the Government has won. I would like to put in one of the cases, typical of the balance, so that we can have the decisions of the courts on both sides.

Senator **Walsh**. In view of the statement made by Lieut Commander Richardson I want to call attention to the testimony given by Mr. Requa when he was here the other day. After telling about the stocks of oil in California he says that the present rate of decline has been varying between a million and a million and a half barrels a month.

> Senator **Husting**. Is that a decline in the yield?
>
> Mr. **Requa**. That is the decline in stocks. The shortage, as I state, is between a million and a million and a half a month, varying from month to month.

Senator **Walsh**. Did the decline arise by reason of reduced production, or by reason of increased consumption?

Mr. **Requa**. It is because of increased consumption.

Senator **Walsh**. The production has not decreased?

Mr. **Requa**. The production has somewhat increased.

Senator **Shafroth**. You say that has produced a decline in the price of stocks?

Mr. **Requa**. Oh, no; a decline in the volume of stocks, the total number of barrels of oil in storage. Unless there is some means found for replenishing these stocks by drilling in some of the lands that are now in controversy, it is quite possible that a very acute commercial crisis will face the Pacific coast. The Southern Pacific Railroad recently sent out a circular letter asking the different companies if they had oil for sale, and if so, at what price they would sell it. While the nominal quotation for oil is 78 cents, or was when I left California—78 cents per barrel at the well—I understand the Southern Pacific has paid as high as $1 and $1.10 for oil for their purposes.

So that Mr. Requa testified here that the only lands that he knows of where the stock could be increased are the lands in controversy—withdrawn lands in controversy. Then, on the next page, he says:

> I have not at hand the total area of withdrawn lands in acreage or figures, but under date of December 16, 1916, I wrote a letter to Lieut. Commander Landis, officer in charge of naval petroleum reserves in San Francisco, stating the situation as I saw it. I will say that the occasion for this was that Admiral Edwards, who was the first chairman of the naval liquid-fuel board,

asked me to obtain certain information. This is contained in Senate Document No. 363. The article is entitled "The exhaustion of the petroleum resources of the United States," which I wrote in my capacity as consulting engineer of the Bureau of Mines. I felt very keenly at the time about the vital bearing that the oil situation had upon the commerce and life of the American Nation. So when Admiral Edwards wrote me and asked me whether I would gather certain data I was very glad to do it, but because of his being superseded in connection with that board, I addressed this letter to Lieut. Commander Landis, who was in San Francisco in charge. It is a complete resume of the situation regarding naval reserves Nos. 1 and 2 and gives the area in acres, patented and unpatented ground, and shows the ownership in both the reserves, but I have nothing at hand that would give the total number of acres within the withdrawn area. Much of that withdrawn area, of course, is not in all probability oil land.

Senator SHAFROTH. You said something about somebody preparing a statement showing the total amount of oil-bearing lands in the United States.

Secretary DANIELS. I requested the Trade Commission to do that.

Senator SHAFROTH. When can they have that report?

Secretary DANIELS. I hope very shortly.

Senator SHAFROTH. How long since you made the request?

Secretary DANIELS. I think it was Wednesday.

Senator WALSH. You can get that by calling up the Geological Survey. You will find it in the annual reports of the Geological Survey.

Lieut. Commander RICHARDSON. In my statement, the unpatented withdrawn oil lands amount to 462,000 acres in California. Of that, I stated that only 15,380 acres were proven producing oil lands, so that there is an enormous amount of unpatented lands classified as oil lands that is not proven; but there are 15,380 acres of proven producing oil land outside of the naval reserve No. 2, in California.

Senator WALSH. I do not care to enter into a controversy with the commander about that matter. I am calling attention to the fact that Mr. Requa testified before this committee only a few days ago that he knew of no source from which the stocks could be replenished, except from the lands in controversy.

Lieut. Commander RICHARDSON. Yes, sir; and the withdrawn oil lands outside of the naval petroleum reserve are in controversy.

Senator WALSH. But he testified in the same connection on the next page that he is referring to the naval reserve.

Lieut. Commander RICHARDSON. I do not think he did, because he told me specifically he did not.

Senator HUSTING. As to the lands in California as a whole?

Senator WALSH. That is the way I understand his testimony.

Lieut. Commander RICHARDSON. I think my statement and the statement of Mr. Requa absolutely agree.

Senator WALSH. I do not so understand.

Senator HUSTING. I would like to move, Mr. Chairman, that the Attorney General, in view of the suggestion of the Secretary of the Navy, be invited to appear before the committee next Monday morning. The Attorney General seemed to be under the impression that this was a matter in which he was not interested and one with which he has nothing to do. I make that motion in view of the statement of the Secretary of the Navy.

MEMORANDUM ON OIL LAND LEGISLATION.

The reported shortage of oil in California may be divided into two parts—that required by the Southern Pacific Railroad Co. and that required by other users of petroleum products.

OIL REQUIRED BY SOUTHERN PACIFIC RAILROAD CO.

The railroad company states that its production and purchases of oil fall short of its needs by 8,000 to 9,00 barrels per day; that it may be necessary to change 280, or about 20 per cent, of its locomotives from oil to coal burners; that such a change would require 67,000 tons of coal per month and 1,200 coal cars to handle it.

Under a court agreement the railroad company has been drilling only defensive wells to offset wells on adjacent property, but recently the company made application to the court for permission to drill interior wells on four sections in naval petroleum reserve No. 2.

The company stated that it desired to drill these wells in naval petroleum reserve No. 2 because the wells could be drilled on the average, as shown by the last 10 wells, in 78 days, and that the drilling was less expensive and the probable production much larger than other wells.

This matter was reported to the Navy Department, and the following letter to Mr. E. J. Justice, under date of April 7, 1916, shows the Navy Department's attitude on that date in regard to drilling these wells:

APRIL 7, 1917.

DEAR SIR: I am informed by Lieut. Commander I. F. Landis that the Southern Pacific Railroad Co. proposes to drill a number of wells in naval petroleum reserve No. 2 on lands now held by it under patent No. 25, which is under attack by the Government.

It is understood that this company in its application to the court for permission to drill these wells presents two alternative areas as follows:

Area No. 1.—Sec. 35, T. 31 S., R. 23 E.; 32 wells proposed. Sec. 1, T. 32 S., R. 23 E.; 28 wells proposed.

Area No. 2.—Sec. 9, T. 32 S., R. 24 E.; 16 wells proposed. Sec. 15, T. 32 S., R. 24 E.; 10 wells proposed. Sec. 17, T. 32 S., R. 24 E.; 8 wells proposed.

These areas are in the heart of naval petroleum reserve No. 2, which was set aside by the President for the exclusive use and benefit of the United States Navy.

If the 60 proposed wells are drilled in area No. 1, and if their production averages 50 per cent of the production of the present wells on these two sections, the proposed wells will yield 6,600,000 barrels of oil per year, and on the same basis of 50 per cent of the production of existing wells on the respective section the 34 proposed wells in area No. 2 would yield 1,000,000 barrels of oil per year. While the drilling of either of the areas would be prejudicial to the Navy's interests, the drilling of area No. 2 would be less damaging than No. 1 because of the relation of the proposed wells to adjacent unpatented land and because of the smaller production.

It has been and is now the desire of the Navy Department to conserve as far as possible the oil content of this reserve for the future needs of the Navy. In view of the great prospective requirements of the Navy for fuel oil and the practically certain decrease in the production from American fields, it is of the utmost importance that the Navy's interests in the naval petroleum reserves be protected.

On June 5, 1915, at a conference between the Attorney General, the Secretary of the Navy, and the Secretary of the Interior it was agreed that nothing should be done to facilitate the production of oil from any unpatented land within the boundaries of these reserves, and that every effort should be made to reduce the production of oil on any lands within these reserves, except where the occupant of the land is legally in possession with rights thereto that are not subject to attack.

Under this agreement, and because the Southern Pacific Railroad Co. has not been active in drilling wells within the reserve, it has been possible to discourage drilling on the unpatented lands and withhold the contracts authorized by the act of August 25, 1914.

If the railroad company is now allowed to drill in either of these areas the large number of wells proposed, it will result not only in a large increase of production from the railroad lands, but it will so strengthen the claims of the operators on adjacent unpatented land for contracts under the act of August 25, 1914, that it will be more difficult, if not impracticable, to withhold these contracts, so that the ultimate result will probably be an enormously increased production from this reserve with the consequent increased drainage and practical destruction of all chances of retaining this reserve as a source of supply for the future needs of the Navy.

It can not be held that it is necessary for the railroad company to drill these interior wells to protect its interests in the lands because the line wells protect the land from drainage through wells on adjacent land.

It may be claimed that the Government will suffer no damage or loss by the drilling of these wells because the proceeds of the sale of the oil or its value would still be subject to recovery through the suits in progress, but the Government as represented by the Navy in this instance needs the oil itself and not its value in money.

Failure to drill the proposed wells can not adversely affect the interests of either the Government or the railroad company in the lands, but the drilling of them would destroy the Navy's interests in the land by conversion of the oil, which constitutes the Navy's sole interest in the lands.

Sincerely, yours,

JOSEPHUS DANIELS.

Mr. E. J. JUSTICE,
Special Assistant Attorney General,
Post Office Building, San Francisco, Cal.

The court did not grant permission to drill these wells, and in passing upon the application stated:

"If it becomes a matter of necessity to enable the Southern Pacific Railroad Co. to run and operate its trains until this court has by a final judgment determined that the Southern Pacific Railroad Co. has no claim to or title in the property in question, this court will permit such to be done. It is not going as a matter of protection to the public—it is not going to prevent this railroad from operating its trains because of even the announced policy on the part of the Government with respect to its use of these lands as long as the responsibility of determining the use to which the land should be put rests with the court. When it passes out of the domain of the court it will be decided by those who will assume the responsibility then. As long as the court possesses the responsibility and is called upon to act the court will act accordingly to its own ideas and its own responsibility to its people and its oath of office rather than in keeping with the responsibility of others, even though they may occupy high stations in the councils of the Government. I don't think that necessity has as yet arisen. I don't think that the railroad company has actually exhausted its opportunities for providing itself with the oil which is necessary in order that it may meet the demands in serving the public * * * if the Southern Pacific Co. desires to do it. The court has no objection to wells being drilled upon this section in question in the naval reserve if it is possible that the drilling of them, in case that final judgment is not reached before they reach the oil stand they can be worked on and temporarily suspended, or if they are drilled they can be in some form or manner capped so as to prevent the withdrawal of oil from the oil measures. If that can be done, then the defendant company can proceed with the drilling of these wells, and if the judgment be in its favor at the conclusion of the case they will have at least that much of a start, so to speak. If the judgment be against it, of course they will have to accept that alternative, which they would have to accept in any event, even though they should go ahead right now with the drilling of wells and the actual extraction of oil from the property. If the Government ever finds any oil in these lands after adjoining operators have concluded their operations, it will, of course, have to take it from these wells. And surely it would be true that if the wells do not penetrate the paying oil measures there will be no harm come to those measures because of the sinking of the wells down to their immediate vicinity."

The attorney for the railroad company stated that he would recommend to his client that the company go ahead and drill wells within this area as "those wells can be sunk down as necessity requires it until a point is reached where the water sands are cased off and oil sands not penetrated," and then if permission is granted by the court the wells can be drilled in on short notice.

That the railroad company is now actually drilling some of these wells is shown from the following report:

Section 35-31-23.—During week of April 19, 1917, the State mining bureau report shows four new wells begun, Nos. 24, 23, 14, and 21. Nos. 23 and 24 are shown on the map and are first-line wells. Nos. 14 and 21 are not shown.

Section 1-32-23.—During week of May 24, 1917, nine new wells were reported begun—56, 57, 58, 62, 67, 72, 77, 82, 87, and during week of June 7 one new well, No. 41. During the week of June 14 wells Nos. 62, 67, 72, 77, 82, 87 were canceled, leaving four drilling. On June 6 the two wells to eastward of 60 and 61 were reported down to about 1,500 feet, and the material was on the ground for two additional wells. These are all second-line wells.

This matter will undoubtedly be handled by the court, and if the railroad actually needs oil which it can not purchase or otherwise produce, the court will, in view of the above quoted statement, permit the company to drill in a sufficient number of interior wells to produce the needed fuel. Therefore it would appear that the needs of the railroad for oil should have no bearing on the question as to whether or not naval petroleum reserve is to be taken from the Navy and delivered to the oil land claimants.

OIL REQUIRED BY OTHER USERS.

The Director of the Bureau of Mines, in a letter dated May 24, 1917, reported that the production in California is averaging about 8,000,000 barrels per month and the consumption over 9,000,000 barrels per month. Gentlemen before the Senate Committee on Public Lands have stated that California requires 40,000 barrels per day, or 1,200,000 barrels per month, more oil than is being produced. Of this total amount something over 8,000 barrels per day, or 240,000 barrels per month, is required by the Southern Pacific Railroad, whose requirements have already been discussed.

Because of this condition it is alleged that it is necessary that Congress open up naval petroleum reserve No. 2 in order to prevent the paralysis of the commerce and industries of California and the Pacific coast.

It is alleged that the production can be increased, but that "the only possible immediate increase is by the development of well-proven oil territory in the State," and it is made to appear that naval petroleum reserve No. 2 is the one well-proven area in California. As a matter of fact, the situation regarding the withdrawn oil lands in California is as follows, practically all of the data being taken from the reports of the Department of the Interior:

	All California.	Naval petroleum reserve No. 2.
Unpatented withdrawn oil land ....acres..	462,000	11,040
Proven unpatented withdrawn land ....do....	21,800	6,520
Oil content of all land both patented and unpatented ....million barrels..	2,345	260
Oil content of unpatented withdrawn land ....do....	460	130

In other words, the unpatented land in naval petroleum reserve No. 2, which is cited as the one area that must be developed to relieve the situation in California, represents less than 2½ per cent of the unpatented withdrawn oil land in California and contains less than 5¾ per cent of the total estimated oil content of the California fields and about 28¼ per cent of the estimated total content of the unpatented withdrawn oil lands in California.

This shows clearly that there is oil and plenty of oil in thoroughly proven fields to provide for the needs of California and the Pacific coast without depriving the Navy of its interest in naval petroleum reserve No. 2.

The Navy Department has never opposed the opening up of the withdrawn oil lands outside of the naval petroleum reserves and it is believed that the present shortage of oil in California can be relieved by the development of such lands to-day.

As a matter of fact, the situation can not be as serious as represented, because the price of crude oil at the wells to-day is 88 cents while the intrinsic value of the oil is reported by the California Oil World to be at least $1.

It is stated that the immediate action is required, or by the end of this year California will be in a serious predicament; yet in the previously cited letter of the Director of the Bureau of Mines it is shown that with the deficit between consumption and production remaining the same the present stocks will be exhausted in June, 1920. If the withdrawn oil lands outside of the naval petroleum reserves are opened up in the meantime, this exhaustion of the oil stocks will, of course, be deferred.

In view of the above and of the fact that wells can be drilled in from two to nine months, depending on the field, it is believed that the situation does not require the immediate releasing of the naval petroleum reserves, particularly when a complete investigation of the situation is being conducted in California, as is shown by the following excerpt from a report from Lieut. Commander I. F. Landis under date of June 14, 1917:

"Gov. Stevens has appointed a committee to investigate the oil situation and to report on a means for increasing production. This committee seems to be going into the proposition very thoroughly. They have heard many of the oil operators and have made a tour of inspection of all the fields. Mr. Hall, Mr. Nichols, and I spent three half days with the commission and furnished them a good deal of information, particularly information in regard to the naval reserves. I believe the committee is impressed with the necessity of protecting the naval reserves, but the oil shortage is becoming alarming and all the operators have hammered away on the proposition that the only way to relieve it is to allow drilling within the reserves."

Petroleum experts agree that the end of the oil resources of the United States is in sight, and one authority estimates that if the normal increase in consumption continues, the estimated oil content of the fields of the United States will be exhausted within 15 years, so that even if the naval petroleum reserves are opened up, the Pacific coast will in the near future have to provide some other source of power than oil, and, besides, we will have a large oil-burning Navy and no oil.

The present shortage of oil in California is largely due to absence of drilling activity in the past few years, and this decrease in drilling was not wholly due to the Government's course in regard to the withdrawn oil lands, but was principally due to the depressed condition of the market for crude oil and the large amount of shut-in or overproduction.

The condition of the California oil industry in this respect is shown by the following excerpts from official papers:

PETROLEUM IN 1915—GEOLOGICAL SURVEY—GENERAL STATEMENT.

"In marked contrast to the reviews of the petroleum situation in California in the last nine years the review for 1915 records a decline in output and a year devoid of spectacular features. As a consequence of this decline and of a remarkable increase in the output of petroleum in Oklahoma, California was forced to yield first rank among the oil-producing States, which it has held since 1908. Although the decrease of 13,000,000 barrels is greater than the combined output of oil in Pennsylvania, New York, and southeastern Ohio in 1915, it represents a decline of only 13 per cent below the quantity marketed in California in 1914. This decrease, which was well distributed among the oil-producing districts of the State, reflects the condition of slight drilling activity in 1915, and should not be interpreted as indicating that the productive areas have been fully developed or that the productive sands are becoming exhausted. The paucity of drilling is accounted for by a depressed condition of the market for crude oil, inherited directly from 1914 but extending back two or three years further over the period of excessive production and stock accumulation, resulting from the completion of a great number of phenomenally productive wells in the Midway-Sunset district.

"The average price received for the petroleum marketed in California in 1915 was 42 cents a barrel, a decrease of 6 cents from the average price in 1914."

BULLETIN 69—CALIFORNIA STATE MINING BUREAU.

"As a result we now see a considerable portion of our great natural resource being taken from beneath the earth and disposed of without adequate profit to the producer, some portion of it even leaving the country and being burned entirely to the profit of strangers. Following on the heels of such unprofitable development we see immense quantities of our liquid wealth being absolutely lost because operators are financially unable to properly protect the sands from encroaching floods of water."

EXHAUSTION OF PETROLEUM RESOURCES OF THE UNITED STATES—SENATE DOCUMENT NO. 363.

"The oil-producing industry has been burdened with a multitude of small producing companies, often officered by men utterly unfamiliar with the business, whose sole aim has been to produce oil regardless of the requirements of the market. It may almost be laid down as axiomatic that there can be no satisfactory condition in the petroleum-producing industry until there is some intelligent coordination between the running of the drill and the requirements of the market.

"In California—and I presume the statement will apply elsewhere—oil has been produced entirely regardless of market requirements; it has been left lying in earthen sumps to evaporate and seep away for want of proper steel or concrete storage. And if this was not enough, it has been wantonly burned under boilers in the oil fields in place of using gas or hydroelectric power. * * *

"Bear in mind that the great bulk of this oil is to-day being burned as crude fuel oil, without any refining, and that we are destroying priceless lubricating stock without adequate financial reward and with utter disregard of the Nation's future requirements.

"The policy of the Standard Oil Co. is in sharp contrast. They are content to find a market for their refinery residuum, given which, they make no further effort to sell fuel oil. One is tempted to inquire as to the relationship to the State as between the Standard Oil Co., which extracts every product before selling the residuum for fuel, and the small producer who sells crude oil for fuel without any intermediate refining—the one conserving the Nation's resources, the other destroying them.

"It has been estimated that 5,000,000 barrels of oil is annually lost in California by seepage and evaporation, and that another 5,000,000 is burned under boilers in the oil fields for fuel in place of using gas or hydroelectric power. Ten million barrels a year of preventable waste. And the exhaustion of our known oil reserves well within sight.

"In the case of the last California surplusage it required five years to correct the evil, during which time conditions have been so acute that proposals were even made to burn large quantities of oil to relieve the congestion and advance the price."

In addition to this avoidable waste, a very large amount of oil has been exported from California, the Department of Commerce reporting that in 1916 9,740,639 barrels were exported. Of this amount over 2,000,000 barrels were crued oil.

According to the report of the California State Mining Bureau, the large marketing concerns and the railroads produce 55 per cent of the total oil produced in California. Under this condition, with the Government suits and the depressed oil market restricting the drilling on some of the lands, it is easily conceivable that these large companies purposely restricted their own drilling in order to create a situation by which a campaign of drilling within the naval petroleum reserves would appear necessary.

OIL REQUIRED BY THE NAVY.

Due to the war, the increase in the number of oil-burning destroyers and the acceleration of the building program, previously-made estimates of the Navy's oil needs must be revised.

It is now estimated that the fuel-oil requirements of the Navy will be as follows:

Fiscal year ending June 30, 1918, 5,000,000 barrels if at war.
Fiscal year ending June 30, 1919, 8,635,0000 barrels if at war.
Fiscal year ending June 30, 1920, 16,635,000 barrels if at war.
Fiscal year ending June 30, 1921, 5,854,000 barrels if at peace.
Fiscal year ending June 30, 1922, 6,574,000 barrels if it peace.

The oil needed for the war must be provided, and after the war we will have a large oil-burning Navy for which we must have an assured supply of oil.

As previously stated, experts estimate that the amount of oil in the known oil fields of the United States will be consumed within 15 years, so that the use for commercial purposes of the oil in the naval petroleum reserves will postpone for only a year the ultimate necessity of providing some fuel other than oil for commercial purposes.

In view of the above, I have considered it my duty to urge that the Navy's interests in the naval petroleum reserves be recognized and protected, and that my position is sound would seem to be indicated by the following extracts from a letter from Mr. M. L. Requa to Lieut. Commander I. F. Landis:

"In view of these conditions, the obvious solution of the problem is for the Government to enter into a contract with the marketing companies whereby the marketing companies will be permitted to lease the lands within the naval reserves, producing annually therefrom a quantity of oil approximately equal to the requirements of the Navy, but delivering to the Navy the heavy fuel oils produced upon their lands, or resulting in the form of residium from the refining of high gravity oils. A policy even more to be desired than this would be for the Government to arrange to buy its fuel oil from the marketing companies, keeping absolutely intact its reserves for some considerable period of years and drawing upon them only when the further purchase of oil would seriously affect industries using that fuel. * * *

"The merest elementary review of the situation from the standpoint of the United States Government requirements would indicate the wisdom of an energetic campaign to acquire satisfactory areas of oil lands properly protected, in so far as possible, from drainage, as well as proper working agreements with the marketing companies.

"I am still insistant in the belief that the activities of the Government should go beyond the confines of the United States and that some recognition should be accorded the Mexican oil fields, wherein it seems possible for the United States to secure a supply of fuel, apparently impossible of acquisition within the United States. * * *

"I can not too insistently nor too strenuously impress upon you the vital necessity of some immediate and constructive act that will once and for all settle this entire matter and provide the Navy with an adequate and satisfactory supply and reserve of fuel oil."

USE OF MEXICAN OIL.

The Mexican oil fields may be relied on to furnish a large part of the Navy's future peace-time supply of oil, but only provided they are supplemented by a prohibitive amount of storage, or by an easily developable oil field such as naval petroleum reserve No. 2. A foreign field, in a possibly unfriendly country lying some distance from our own ports, can not be relied on for war times, nor can the Navy in time of war make a sudden call for 2,000,000 barrels of fuel oil a month without disrupting private enterprises. There must be an adequate reserve for this purpose.

The Navy Department has not discriminated against Mexican oil, as the committee has been informed, but has specifically provided that suitable grades of Mexican oil were acceptable. Attention is invited to the first paragraph of the specifications for fiscal years 1917 to 1918 quoted below.

In January, 1914, tests were run at the fuel oil testing plant with commercial grades of reduced Mexican oil. The same year a cargo of Mexican oil was burned in the destroyer force. These tests indicated certain changes in installation were necessary to burn this oil and these alterations were made.

SPECIFICATIONS FOR THE FISCAL YEAR 1917.

"(*g*) A fuel oil meeting the specifications, whether a mixture of American and Mexican oils, or derived from American crudes, or from Mexican crudes, will be acceptable, and it will not be necessary for the bidder to submit prices on the three kinds of oil mentioned. The contractor will be required to deliver the oil specified in the proposal upon which contract is awarded.

II. SPECIFICATIONS—DEFINITION APPLYING TO SPECIFICATIONS.

"(*a*) Fuel oil shall be a hydrocarbon oil of best quality, free from grit, acid, fibrous or other foreign matter likely to clog or injure the burners or valves, and shall, if required by the Navy Department, be strained by being drawn through filters of wire gauze having 16 meshes to the inch. The clearance through the strainer shall be at least twice the area of the suction pipe and strainers shall be in duplicate.

"(b) The unit of quantity to be the barrel of 42 gallons of 231 cubic inches at a standard temperature of 60° F. For every decrease or increase of temperature of 10° F. (or proportion thereof) from the standard, 0.4 of 1 per cent (or prorated percentage) shall be added or deducted from the measured or gauged quantity for correction.

"(c) Flash point never under 150° F. as a minimum (Abel or Pensky-Marten's closed cup), of 175° F. (Tagliabue open cup), and not lower than the temperature at which the oil has a viscosity of 8 Engler (water = 1 Engler). (Example: If an oil has a viscosity of 8 Engler when heated to 186° F., then 186° F. is the minimum flash point at which this oil will be accepted.)

"(d) Viscosity at 70° F. not greater than 200 Engler.

"(e) Water and sediment not over 1 per cent. If in excess of 1 per cent, the excess to be subtracted from the volume; or the oil may be rejected.

"NOTE.—If an Engler viscosimeter is not available, the Saybolt standard universal viscosimeter may be used, and 300 seconds Saybolt will be considered equivalent to 8 Engler, and 7,500 seconds Saybolt will be considered equivalent to 200 Engler."

Under this specification deliveries of commercial reduced Mexican oil were made at Newport and Boston, and the oil was burned by the destroyers in general service.

The commercial reduced Mexican oil (residium) had a strong military disadvantage in that smokeless runs could be made only at decidedly reduced speed and that boilers fouled quickly. As a witness has stated, Mexican distillates are perfectly satisfactory, but they can not be obtained in any large quantities.

In order to insure the furnishing of a quantity of oil which would give the Navy fuel oil most suitable for its use in the present war, the following specification was determined on after consultation with representatives of the petroleum committee:

While with the oil-burning equipment now installed in the United States Navy a somewhat heavier oil could be burned successfully, it was considered necessary to adopt a specification more nearly approaching that of the British Admiralty in view of the fact that our destroyers are operating from foreign bases and the oil must be stowed in the regular tanks at those bases. The Navy specification is not even now as rigid as the admiralty specification.

SPECIFICATIONS FOR THE FISCAL YEAR 1918.

"(h) Fuel oil meeting the requirements of the Navy, whether derived from American crudes or from Mexican crudes, or from a mixture of the two, will be considered. The quality and kind of oil shall be fully described in the bid, together with information of the original source from which the oil is to be obtained and the treatment to which it is to be subjected. The contractor will be required to deliver the oil specified in the proposal upon which contract is awarded.

II. SPECIFICATIONS.

"(a) Fuel oil shall be a hydrocarbon oil free from grit, acid, and fibrous or other foreign matter likely to clog or injure the burners or valves. If required by the Navy Department, it shall be strained by being drawn through filters of wire gauze having 16 meshes to the inch. The clearance through the strainer shall be at least twice the area of the suction pipe and strainers shall be in duplicate.

"(b) The unit of quantity to be the barrel of 42 gallons of 231 cubic inches at a standard temperature of 60° F. For every decrease or increase of temperature of 10° F. (or proportion thereof) from the standard, 0.4 of 1 per cent (or prorated percentage) shall be added or deducted from the measured or gauged quantity for correction.

"(c) The flash point shall not be lower than 150° F. as a minimum (Abel or Pensky-Mareen's closed cup) or 175° F. Tagliabue open cup. In case of oils having a viscosity greater than 8 Engler at 150° F., the flash point (closed cup) shall not be below the temperature at which the oil has a viscosity of 8 Engler.

"(d) Viscosity shall not be greater than 40 Engler at 70° F.

"(e) No residuum of any destructive distillation, or so called 'cracking process,' to be mixed or included in fuel oil furnished the Navy under this contract.

"(f) Water and sediment not over 1 per cent. If in excess of 1 per cent, the excess to be subtracted from the volume; or the oil may be rejected.

"(g) Sulphur not over 0.75 per cent.

"NOTE.—If the Engler viscosimeter is not available, the Saybolt standard universal viscosimeter may be used. Equivalent viscosities: 8 Engler=300 seconds Saybolt; 40 Engler=1,500 seconds Saybolt."

In the case of Mexican distillates which exceed the allowed percetnage of sulphur, this requirement is waived.

One of the destroyers is engaged at the present time in experiments to ascertain the maximum percentage of Mexican reduced oil (residium) that can be mixed with the lighter oils and burned without smoke.

The ACTING CHAIRMAN. We will next hear Mr. W. M. Downing.

STATEMENT OF MR. W. M. DOWNING, OF DENVER, COLO.

Senator WALSH. Mr. Downing, what is your profession?

Mr. DOWNING. I am an attorney at law.

Senator WALSH. Where do you live?

Mr. DOWNING. Denver, Colo. I am an attorney at law and have a number of clients operating in Wyoming. I think I represent very fairly the view of the majority or practically all of the operators in the State, except, possibly, the large refiners. That is only my supposition, however.

Senator WALSH. Is there considerable activity in that region at the present time?

Mr. DOWNING. Yes, sir. I was, and have been, very much impressed, Senator Walsh, with the idea that I should present for your consideration the question of speeding up the development work and the production.

Senator WALSH. What is the production of the State of Wyoming at the present time?

Mr. DOWNING. At the present time I think it is from 6,000,000 to 7,000,000 barrels.

Senator WALSH. Are there any extensive withdrawn areas in the State of Wyoming?

Mr. DOWNING. There are withdrawn areas—perhaps a dozen withdrawn areas.

Senator WALSH. Are those fairly well proven?

Mr. DOWNING. The policy has been, as fast as an area is proven to be productive, to immediately withdraw it. For that reason the development work in the State of Wyoming has necessarily had to depend upon work in areas not withdrawn; and the operator has been working at the risk of having his land withdrawn pending his development.

Senator WALSH. Operations are being conducted, of course, on land held in private ownership?

Mr. DOWNING. I would say that nearly all of the possible oil-bearing lands in Wyoming are under Government ownership except in so far as they are affected by the locations thereon.

Senator WALSH. As to these withdrawn areas, are they naval reserves?

Mr. DOWNING. There is only one reserve, known as the Teapot reserve, or naval reserve No. 3, and that would not be particularly affected by any leasing bill, because there are few, if any, private claims attached to that reserve.

Senator WALSH. So that, really, the prosecution of work is very much embarrassed in the State of Wyoming by reason of these withdrawals?

Mr. DOWNING. Yes; and by reason of the possibility that the Government, in passing any sort of an oil-leasing bill, will not make adequate provision to protect the existing rights of claimants.

Senator WALSH. What is the annual production of Wyoming now?

Mr. DOWNING. I think 6,000,000 or 7,000,000 barrels. I could not state that positively.

Senator WALSH. Under an adequately prepared law, how much could that be increased?

Mr. DOWNING. If certain withdrawn areas were allowed to produce I would think they would add from 10,000,000 to 15,000,000 barrels per annum very speedily; and if proper encouragement were given to development work I would not be surprised to see the production of Wyoming increased by from 20,000,000 to 40,000,000 barrels per annum, and may be very much more. Now, that is more or less speculation, of course.

Senator WALSH. As I understand you, the idea is this: Contemplating that the leasing bill will be passed, the operator is afraid that it may go into effect while he is actually conducting operations, and that he will not secure the benefit of the work theretofore done.

Mr. DOWNING. Yes; and that the bill may go into effect before he gets started, as there is the great expense that he must go to to start operations on account of the shortage of materials.

Senator WALSH. So that you think some provision should be made for the transition condition?

Mr. DOWNING. Yes, sir.

Senator WALSH. What would you suggest?

Mr. DOWNING. I would suggest that persons who have filed their location certificates and are now bona fide claimants of the public lands under existing law be given the right to proceed, unaffected by pending legislation, provided that within some short, reasonable time they drill wells, say, to a depth of 2,000 feet, or until commercial oil is discovered.

Senator WALSH. I recognize, Mr. Downing, the bill before us is defective in not making provision for the case that you speak of. I have used the Pickett law, with which you are familiar, as a model, and now propose to the committee the following amendment:

> Any bona fide occupant or claimant of oil or gas bearing lands open to location and entry under existing laws, who at the time of the passage of this act is in diligent prosecution of work leading to discovery of oil or gas, shall not be affected or his right to acquire title to the same under such laws be impaired hereby so long as such occupant or claimant shall continue in diligent prosecution of such work.

So, if the act should go into operation on the 1st day of July or the 1st day of August and a man was at that time actually drilling, and he kept on drilling, he would get his title, under the law.

What criticism have you do make, if any, of that provision?

Mr. DOWNING. The criticism I have to make is that it is under that very law that all the litigation and difficulties have arisen in the

State of California. That law requires that a man who has gone to work in good faith on the public domain, under existing law, do a very much greater amount of work than the law provided for and he contemplated and would be prepared for at the time the law would go into effect, and the result would be a controversy, which would terminate in litigation which might tie up the future development of the State of Wyoming just as effectively as the litigation in California has prevented production from that source. In other words, I would not leave it a matter of controversy as to what he has done in the past. I would say, on the other hand, "If in the future you drill a well"—not use the words "proceed with diligence," because that is a matter of court construction—but "if, within a year or two years, you drill a well 2,000 feet deep or produce commercial oil, we will give you a patent." That makes it definite, certain, clear, and understandable. He knows exactly what his rights are and what he can do. Furthermore, the amendment suggested protects only the wealthy corporation with large means and complete drilling equipment and does not protect the pioneer or poor man who has not and can not speedily obtain those things.

Senator WALSH. How much of a basis would you have as a foundation for his claim at the time the act takes effect?

Mr. DOWNING. You would have the basis provided by the laws of the United States, namely, the right to initiate and——

Senator WALSH (interposing). The trouble, Mr. Downing, is that there is no basis under the laws, because under existing laws he has nothing until he makes a discovery; and we assume that he has not yet made his discovery. Now, what I want to know is what, in your judgment, would be enough for him to have done at the time the act goes into effect to entitle him to the protection of the saving clause?

Mr. DOWNING. I would answer your question by saying this: The universal custom in Wyoming has been to validate a location. The oil situation, or discovery situation, is quite different in Wyoming from what it is in California, or at least parts thereof. It is possible in nearly every one of these locations in Wyoming to discover oil-bearing shale or sink a shallow well in which oil will be discovered in a quantity which, under the decision of the United States district judge at Cheyenne, is sufficient to constitute a valid discovery. If that decision stands, he has a perfected claim. We do not know what the law is going to be on the question of discovery. We may not know for 2 or 3 years, or, perhaps, 10 years. I think every one who has validated a claim under the law should have the benefit of the protection of the act, provided from that time he proceeds with such diligence as you may require in specific terms.

Senator WALSH. You would make a provision that any person who had complied with the laws in reference to the locations and had actually made discovery of oil should be——

Mr. DOWNING (interposing). Had made a discovery of the character contemplated by the decision of Judge Riner.

Senator WALSH. You could hardly frame such a statute.

Mr. DOWNING. It could be framed to cover the situation.

Senator WALSH. It might be that we could cover the situation, considering the terms of Judge Riner's decision, because I can not conceive there should be any trouble about that.

Mr. DOWNING. The trouble we will have in Wyoming is this: There will be a contest between the bona fide claimant and the Government. He will claim one thing, and one of the departments of the Government, which is not over friendly to the oil operator, will claim another thing; and the result is we will have all the oil lands tied up for years. That is the principal thing we wish to avoid. We desire very much to avoid that situation. Let us recognize those people who have bona fide claims and give them their patents, provided they do something else—that is, spend their money in development and not in litigation.

Senator WALSH. It seems to me you do not avoid controversy by your plan, because the question will then arise whether he had actually done work and made the discovery contemplated by the ruling of Judge Riner, and these captious fellows down here in the departments will insist that the case does not fall under the Riner decision; so that you will have controversies again.

Mr. DOWNING. The suggestion I wanted to make was that the right should be dependent upon the condition, say, that a man who has initiated a claim and recorded it, and who then, within two years drills a well 2,000 feet in depth, or makes a commercial discovery shall have the right to patent under existing law.

Senator WALSH. If you pass a law like that, then you take care of the case of the man who goes to work, marks off the ground, and never does anything else. You want to avoid that fellow, because he is not entitled to any consideration at all.

Mr. DOWNING. But should you deny the right to those who are bona fide occupants because there are some who are not?

Senator WALSH. Certainly not.

Mr. DOWNING. Suppose, however, a man is of that class, having what is termed by the department a paper title; it is worth nothing to him unless he develops oil. It is now unproductive. As the result of his work it may be made productive. As the result of that work you may open an oil field with 300,000,000 barrels in it.

Senator WALSH. But you give to him practical priority over ground to which he has done nothing at all except to put up a notice and record it.

Senator SHAFROTH. Suppose he has been deterred from doing his work by the action of the Government; should he not have that right?

Senator WALSH. Certainly.

Mr. DOWNING. All the good oil in that State was withdrawn from entry; at least, all that the Government thought was good. Nevertheless there have been discoveries. I would say, although I am frank to admit that this is only an estimate, that before this year has expired there will have been at least a thousand wells, perhaps 1,500, drilled in territory which the Government has not thought it worth while to withdraw. Some of us have great confidence in the future of the oil fields of Wyoming. We believe it is going to be one of the great oil States of the Nation; and if it becomes such a field, considering the usefulness of oil at this time of national emergency, it will be due to these fellows who are taking chances on governmental policies, and are going out into territory which the

Government has not considered sufficiently valuable to withdraw, and making it valuable.

Senator WALSH. I want to protect that fellow, but, on the other hand, the fellow will get no protection who just merely went into a certain locality, possibly for the purpose of keeping other people out, and simply put a notice on record.

Mr. DOWNING. There is not near that amount in Wyoming that you would apprehend. Of course, there is some of that. You can undoubtedly draw a law which would meet the situation more exactly than the one I have suggested. However, it would bring about controversy between the locator and the Government.

The point I wish especially to impress upon the committee, in order that things may go forward speedily, and that litigation may be avoided, is that you should recognize the man who has recorded his location, not for what he has been doing in the past, but from that time onward requiring him to proceed with diligence. Do not use the words "proceed with diligence," but within a specified time make him do a specified amount of work. Then there can be no controversy about that.

Senator HUSTING. These fields that you are operating are proven or unproven land?

Mr. DOWNING. Unproven land. They are being made productive through the diligence and experience of the operator after the Government had considered them of very little, if any, value.

Senator HUSTING. Have you found any wells on these unproven lands?

Mr. DOWNING. I would say in that connection that outside of the Salt Creek district every field in Wyoming two years ago was considered worthless, and to-day some of them are producing largely.

Senator HUSTING. How much is the maximum oil production per well?

Mr. DOWNING. I imagine a thousand barrels. The biggest well in Wyoming amounts to about that. The average is about 250. They are not big wells, but they are good wells.

Senator HUSTING. How many acres of oil land have you in Wyoming?

Mr. DOWNING. I think more or less of the entire State was originally underlaid with oil. Of course that has since collected in domes or pools. I believe, if you will pass legislation that will give the operator a fair chance, and you do not cut him off in the middle by unexpected legislation, Wyoming will very largely solve the oil supply of the Nation.

Senator WALSH. It has been suggested that, in spite of giving protection to the man who has diligently prosecuted work, it is always a matter of more or less controversy, and there is the question of the lease to be given to the man who has done $500 worth of work on his claim.

Mr. DOWNING. Of course, if that is done, that man is entitled to a patent.

Senator WALSH. Not at all. We assume that he has made discovery, that he has done work to the value of at least $500 on his claim.

Mr. DOWNING. If that could apply on the theory of group development, it would not be unfair, in my judgment, because of the larger expense of getting into new fields. Remember, our people are pioneers. It is largely geological work; it is work that requires a capable expert, a student of structure.

Senator WALSH. The grouping principle does not apply to discovery work.

Mr. DOWNING. If you are proposing an expenditure of $500 as a condition in connection with the right to proceed under existing law, it should be applied on the basis of group expenditure, rather than upon the expenditure upon a single claim.

Senator WALSH. So that if a man had done $10,000 worth of work, he could hold 20 claims?

Mr. DOWNING. He could not in the future.

Senator WALSH. At the time of the passage of the act?

Mr. DOWNING. If a man had spent $10,000 for the benefit of the group of claims, he should be entitled to hold them, to the same extent as if he spent $500 on each of 20 claims.

Senator SHAFROTH. I want to ask whether this could be remedied, if you were to pass a law, outside of the naval reserve question, to withdraw all reserves by statute.

Mr. DOWNING. I am very much inclined to think that any legislation at all is going to prove a drawback, at least, temporarily. Any change of that kind would be apt to be a drawback. I think if the Wyoming lands which were withdrawn were restored, as the Senator suggests, and the operators could proceed under existing law, you would get twice the production. In other words, if the Wyoming situation were recognized by law, and if the discovery of oil-bearing shale, or oil seepage, under favorable geological conditions, were recognized as discovery, you would then have exactly the same condition that you have as to gold placers, under which enormous productions were made.

Senator SHAFROTH. But, Mr. Downing, you might be obliged to drill to a depth of 2,000 feet before you discover oil shale.

Mr. DOWNING. Yes; but in most instances the shales show on the surface.

Senator SHAFROTH. Now, I wish you would tell the committee about the people you represent as attorney. Will you explain to the committee what their situation is, when they located, how much work they have done, and what you propose for their relief?

Mr. DOWNING. I represent a number of different companies in different situations, and I have endeavored to present this as a general proposition rather than as a specific one.

Senator SHAFROTH. Well, if you do not care to go into it specifically, that will be all right.

Mr. DOWNING. Your question, Senator, calls attention to another situation, namely, there were a number of instances where there were locators prior to withdrawal. There were people who went on the public land in good faith under existing law, who were cut off in the middle, very much as other persons might be cut off by the passage of the present bill. We think they occupy very much the same situation. It is true we have the Pickett Act, but the Pickett Act is not a protection for the Wyoming operators. It was designed by California people to meet the California situation. It requires a man, at the date of the act, to be in actual possession, working with actual diligence, and requires a much higher degree of work, a greater expenditure of money, than any pioneer prospector could hope to expend. It protects only the rich operator. You must remember, Senator, that two or three years ago the Wyoming oil fields were in a pioneer stage, with the exception of the Salt Creek field. With that exception, there was practically nothing in the State, and the men who went out were not men with large capital, but were men who hoped to make their finds, do the required work, make discoveries of the kind I have indicated, and then secure the cooperation of larger capital in order to do their work on a larger scale. These men were confronted with these withdrawals. These withdrawals made it impossible to secure any adequate financial cooperation. It made it impossible for them to proceed with the diligence that the Pickett Act required, yet, notwithstanding that fact, they have claims based on what they consider valid discovery. They have proceeded with some diligence since.

Clients of mine have expended thousands and thousands of dollars after the withdrawals, believing that they would come within the rule of diligence. Now, those matters are in suit. It may take years of litigation. In the meantime production is tied up, and the land is not available to the public. Our proposition and desire with respect to those people is that some rule be adopted that where there was a location before withdrawal and the locator has proceeded with some diligence, he at least be given a preferential right to lease. In other words, he should have the right to lease the ground over and above some one who had never seen it before.

Senator SHAFROTH. Let us see whether these *facts* would justify depriving a man of his rights. Suppose, for instance, in 1913 a man went on the public domain and located, under the placer act, an oil well, and he proceeded with all the work that the statute required until 1914, when the withdrawal order was made. Now, if he had not made a discovery of oil in commercial quantity, as I understand it, the ruling is now, except as to Judge Riner's ruling, that he losses everything he has done upon the claim?

Mr. DOWNING. Exactly.

Senator SHAFROTH. That is the law at the present time?

Mr. DOWNING. Yes, sir.

Senator SHAFROTH. Don't you think there should be relief for people who spent money in doing the work, not knowing that the reserve was going to be made?

Mr. DOWNING. I think, in equity and ordinary fair play, a man who has proceeded in good faith under those circumstances ought to have the right to a preferential lease.

Senator SHAFROTH. He should have a right to proceed until he does find oil, if it can be found?

Mr. DOWNING. Yes, sir. That is where the right of preferential lease should be given, not so much on the basis of the past, because that means controversy, but rather on the basis of speedy work and real development in the future. In other words, say to the man, "If you claim a preferential lease, we will give it to you if you put down some wells quickly."

Senator SHAFROTH. Do you know of any instance where people have located upon the public domain for oil and have done a large amount of work but who have not yet produced or discovered oil in commercial quantities whose claims are now contested by the Government by reason of the fact that they have not discovered oil?

Mr. DOWNING. I have one client that expended perhaps $250,000 in the development of a field, but for one reason or another has not produced commercial oil. He has at all times proceeded in good faith, proceeded under locations made prior to the withdrawal, and who, in fact, by his discoveries has opened up one of the valuable fields of Wyoming, yet he will never be able to receive a dollar of return unless he gets it in some form through a preferential lease law. That is not the only instance, but that thing has occurred in a number of cases.

The Department of the Interior and the Department of Justice require a degree of diligence that is absolutely impossible with the early locators; so, if you do not comply with it you have no rights. I think that controversy should be settled by compromise rather than by taking it up to the Supreme Court of the United States, by means of a rule which would give to the locator in good faith prior to withdrawal a preferential lease upon some fair terms.

Senator SHAFROTH. Would you prefer a preferential lease to being permitted to proceed until you had found oil in commercial quantities, and then take a patent?

Mr. DOWNING. We prefer to have a patent, but in dealing with the Government we have to take what we can get. It seems to me that the most the locator can hope for is to get a lease. It is on that basis, and that basis only, that we ask for a lease. The point is this, the operators in Wyoming simply wish this. They wish to be given a chance to get ahead and a chance to add enormously to the oil supplies of this country. You can do that by legislation which will facilitate and encourage the development of the land. On the other hand, if you pass legislation along harsh lines you will continue existing controversies, as well as create new ones, and you will lock up the reserves of that State at the wrong time.

Senator SHAFROTH. Have you drafted anything in the way of an amendment that you think would cover the situation you describe?

Mr. DOWNING. I have not drafted anything that I would care to submit, but I would like the privilege of submitting to the chairman of the committee, a draft of an amendment which would meet the situation which, I want to assure you, Senator, is a very serious one. You may make a great mistake by being harsh and unjust to the oil operators of Wyoming, and do more detriment in the way of tying up production than may appear at first glance.

Senator SHAFROTH. I ask unanimous consent that Mr. Downing be permitted to submit something in the nature of an amendment which he thinks will cover the situation in Wyoming.

The ACTING CHAIRMAN. Without objection, that will be the order. Is there anything further?

Mr. DOWNING. I do not think I have anything further.

Senator HUSTING. I was going to ask Mr. Downing one or two questions about these unimproved fields in Wyoming. Are those fields in the naval reserve?

Mr. DOWNING. No, sir.

Senator HUSTING. How does the land lie with reference to the naval reserve? In other words, have oil fields been discovered in the vicinity of the naval reserve?

Mr. DOWNING. Naval reserve No. 3 lies close to the Salt Creek field. That is probably a part of the same field, but owing to the fact that it has been reserved, it has never been drilled. Any estimate as to what it contains is only a guess. So far as any relief that I have asked for is concerned, it would not affect naval reserve No. 3, because there are no private claims that would be affected, so far as I know on that land. In other words, whatever relief you may give to Wyoming generally would not affect the naval reserve situation because there were no claims initiated upon that land prior to withdrawal. If there are any there they are very small.

Senator WALSH. I think that is all, Mr. Chairman.

The ACTING CHAIRMAN. The committee will now hear Mr. Chester Naramore.

STATEMENT OF HON. CHESTER NARAMORE, CHIEF OF PETROLEUM DIVISION, BUREAU OF MINES, DEPARTMENT OF THE INTERIOR.

Senator WALSH. Mr. Naramore, you are associated with the Bureau of Mines, are you not?

Mr. NARAMORE. Yes, sir.

Senator WALSH. What position do you hold in that branch of the Government?

Mr. NARAMORE. Chief petroleum technologist; that is, chief of the petroleum division of the Bureau of Mines.

Senator WALSH. And as such have you been obliged to give some study and thought to the petroleum supply of the country?

Mr. NARAMORE. Yes, sir.

Senator WALSH. Taking the country as a whole, is the supply increasing or diminishing, Mr. Naramore?

Mr. NARAMORE. It is diminishing. The stocks are dropping off rapidly, as indicated in the report that was embodied in the first day's hearing.

Senator WALSH. Submitted in connection with Mr. Manning's testimony?

Mr. NARAMORE. Yes, sir.

Senator WALSH. My recollection is that that shows that at the close of 1915 the stock on hand was 170,000,000 barrels. At the close of 1916, 150,000,000.

Mr. NARAMORE. Approximately. I do not remember the exact figures offhand.

Senator WALSH. What do you figure will be the stock on hand at the end of the current year?

Mr. NARAMORE. That is all dependent upon the Mexican returns, of course.

Senator WALSH. The Secretary told us a little while ago, Mr. Naramore, concerning possibilities in the Gulf field. What have you to say about that?

Mr. NARAMORE. That is, in the Texas field?

Senator WALSH. Yes.

Mr. NARAMORE. Well, there are considerable possibilities of an increased production there, but it is not of any absolute certainty. Their production is obtained from the development of domes, and the domes apparently, from the action of those opened up to date, are more or less short lived. We look with a great deal of hope to Texas for a considerably increased production, but there is no definite assurance.

Senator **Walsh**. What are the fields that at the present time offer the greatest promise, assuming there were perfect liberty to develop them?

Mr. **Naramore**. Of all the oil fields?

Senator **Walsh**. Yes.

Mr. **Naramore**. Well, for new production we look to California and Wyoming more than anywhere else.

Senator **Walsh**. Something was said about the Osage country.

Mr. **Naramore**. The Osage field is a reserve that belongs to the Indians. We figure that there is a definite reserve of oil there.

Senator **Walsh**. They are executing leases of those lands pretty rapidly at the present time, are they not?

Mr. **Naramore**. I would have to refer those questions to Commissioner Sells.

Senator **Walsh**. How recently have you been in the California and Wyoming fields?

Mr. **Naramore**. I have not been in the Wyoming fields at all—well, not since seven or eight years ago. I have been in the California fields within the last three months.

Senator **Walsh**. Speaking about the California situation, is the product increasing or diminishing there?

Mr. **Naramore**. We estimate that there will be a slight increase in the production this year; that is, in the entire State. That is based upon the production of the last few years and the production for the first three months of 1917.

Senator **Walsh**. Taking the consumption of the country at large, how is the consumption increasing?

Mr. **Naramore**. It is going ahead very rapidly.

Senator **Walsh**. From what causes?

Mr. **Naramore**. Well, the increased use of the automobile, the tractor, and everything that has to do with the consumption of petroleum and it products.

Senator **Walsh**. What additional drains will the war make upon the supply?

Mr. **Naramore**. We have made various estimates of that, and after considering all the factors that we could get from the Navy Department or anyone else of whom we made inquiries, we concluded that there was approximately 20,000,000 barrels, I believe, in excess of the ordinary peace consumption.

Senator **Walsh**. For the whole country?

Mr. **Naramore**. Yes. You must remember those figures are based upon just such figures as we could get together, without access to the Navy records. They were not in a position at the time to supply us with figures. I might say that the Bureau of Mines, anticipating something like this present petroleum shortage, started last fall to collect the data that was included in the statement that was delivered to you by Director Manning.

Senator **Walsh**. So you have been unable, as I understand you, to get any estimate from the Navy of their necessities, we will say, for the ensuing year?

Mr. Naramore. We did not get a comprehensive estimate; but we got partial estimates, based upon fragmentary statements; that is all.

Senator Walsh. Were you able to get anything from the Army?

Mr. Naramore. No sir; their wants are not definitely known as yet to us. It would be an estimate, from whatever source we received it.

Senator Walsh. What are the present sources of supply for the allies in Europe, Mr. Naramore?

Mr. Naramore. Primarily from the United States. A small amount is shipped direct from Mexico, and then there is some from the Far East. The Dutch East Indies ship in some gasoline.

Senator Walsh. From where?

Mr. Naramore. I think they get some from Rangoon. But in percentage, the major portion comes from the United States.

Senator Walsh. Do you know of any other source from which they will likely be able to supply themselves during the ensuing year?

Mr. Naramore. No; I think they will depend more and more upon us—and Mexico, of course.

Senator Walsh. Are you familiar with the provisions of the bill before you?

Mr. Naramore. In a measure, yes.

Senator Walsh. What is your view concerning the provisions of the bill so far as they affect the petroleum lands? Does it in a general way meet your personal view, or have you any statement to make in connection with it?

Mr. Naramore. I think that is more a matter of policy for Commissioner Tallman. I am not a lawyer in any sense of the word.

Senator Walsh. Have you ever been in the California fields?

Mr. Naramore. Yes, sir.

Senator Walsh. How recently?

Mr. Naramore. Three months ago; within the last three months.

Senator Walsh. On some official tour?

Mr. Naramore. Yes, sir.

Senator Walsh. Are you familiar with the California fields?

Mr. Naramore. Yes, sir.

Senator Walsh. You know the naval reserves Nos. 1 and 2?

Mr. Naramore. Yes, sir.

Senator Walsh. Are you familiar with the withdrawn areas outside of these naval reserves; that is to say, the land which is regarded as promising petroleum land, in acreage about 15,000?

Mr. Naramore. Yes, sir—well, I don't know exactly where they mean. I have been over nearly all of the withdrawn lands in the State, but I do not know what particular acreage they meant when they designated that 15,000.

Senator Kendrick. Did not the witness testify that the acreage amounted to 140,000?

Senator Walsh. Yes; withdrawn; but only about 15,000 that have been proven.

Mr. Naramore. I have a map here, a part of Bulletin No. 623 of the Geological Survey, which shows all of the withdrawn area.

Senator Walsh. What is the aggregate in the State of California?

Mr. Naramore. I would not say offhand; it is a very large acreage. [Exhibiting map.] You see, the land included in this colored area is withdrawn from entry; then this in the hatched section represents the naval reserves No. 1 and No. 2.

Senator WALSH. Of course the reserves are only a small portion of the total reserved area?

Mr. NARAMORE. Yes, sir.

Senator WALSH. And the reservations are made upon a general geological reconnoissance?

Mr. NARAMORE. Yes, sir; recommendations from the Land Classification Board, I believe—the geologists of the Geological Survey.

Senator WALSH. Do you know how much of the withdrawn area has been proven so that it is known by actual test that it is oil bearing?

Mr. NARAMORE. No; I could not say that. Of course there are certain areas of patented lands within the exterior limits of this withdrawal.

Senator WALSH. The act in question, then, if it were passed, would really have application to a large area in the State of California outside of the naval reserves?

Mr. NARAMORE. As I interpret it, it would.

Senator WALSH. Do you know of any of those areas that have been demonstrated to be oil bearing other than by the geological reconnoissance?

Mr. NARAMORE. Yes; a goodly portion of the proven fields where they have not received title, large portions of the Midway field, some of the Coalinga field, and some areas in the Sunset flat.

Senator WALSH. Would you feel that the California production could be materially enhanced by the application of an act such as that contemplated by this bill outside of the naval reserves?

Mr. NARAMORE. With an unlimited supply of casing and tools and materials.

Senator WALSH. That is to say the oil is there, the difficulty being to get the necessary drilling done and the pipe-line facilities?

Mr. NARAMORE. The pipe-line facilities are there.

Senator WALSH. Just simply the connections and the casings for the wells?

Mr. NARAMORE. Of course they could not get as large a production in as short a space of time as they could from naval reserves No. 2.

Senator WALSH. Could you give us any idea about the extent to which the California production could be increased under an act such as this bill contemplates?

Senator HUSTING. Outside of the reserves?

Senator WALSH. Outside of the reserves, leaving the reserves intact.

Mr. NARAMORE. Oh, that would be only one man's estimate against another's. I would be rather reticent about putting it in figures, because it brings into question problems that we as engineers have talked over numbers of times, as to whether or not certain anticlines will produce oil.

Senator WALSH. Of course we understand, Mr. Naramore, that that would be only in the nature of a guess, but you are about the best fellow we can think of to make the guess for us.

Mr. NARAMORE. For the last year I have been representing the State of California as deputy supervisor of this Midway Sunset field and McKittrick, and my aim was to keep tab on that question.

Senator WALSH. There are apparently fields outside of the naval reserves that are known by distinguishing names?

Mr. NARAMORE. Why, they are local names given to the fields in question. It is really one field from McKittrick clear to the end of Sunset. This section around Maricopa is known as the Sunset field; this section is known as the Midway field; and then the McKittrick field.

Senator WALSH. And those regions lying to the south and west of the naval reserve?

Mr. NARAMORE. Yes, sir; the naval reserve No. 2 is commonly spoken of as the Buena Vista hills district.

Senator HUSTING. How do these three you have just mentioned compare in area with naval reserve No. 2?

Mr. NARAMORE. Much larger.

Senator HUSTING. How much larger?

Mr. NARAMORE. Well, it is shown on the map here.

Senator HUSTING. But can you not give us the area? We know how many acres are in the naval reserve, and what I am trying to get at is how much there is outside of the naval reserve in those fields you have just mentioned. Is the total area twice as large?

Mr. NARAMORE. I should say about four or five times as large.

Senator WALSH (referring to map). What do the hatched lines within the reserved area signify?

Mr. NARAMORE. That is just to outline the boundary lines.

Senator WALSH. No. Some of the sections are marked in plain yellow, and the others——

Mr. NARAMORE. The plain yellow is the outstanding withdrawals of September 30, 1916, of that date. The lands patented to railroads are shown by hatchings running in this direction [indicating], and lands patented other than those to the railroads, in fee, in the other direction. It shows that a large part of this withdrawn area has passed out of the Government's control.

Senator WALSH. And it is only those areas that are in yellow and not hatched at all that would be subject to the operation of an act such as is contemplated by this bill?

Mr. NARAMORE. That is all.

Senator KENDRICK. Will you show us a map showing the Wyoming naval reserve?

Senator SHAFROTH. Before you come to that, I would like to ask you the total acreage or area of the withdrawals in the State of California.

Mr. NARAMORE. I do not know that figure offhand, Senator Shafroth. It is about a million and a quarter acres. You see, it is changing from time to time; lands are being restored.

Senator SHAFROTH. One million two hundred and fifty thousand acres?

Mr. NARAMORE. Approximately; that is the figure Mr. Beal just gave me.

Senator SHAFROTH. Have you the figures in the entire United States of withdrawals for oil purposes?

Mr. NARAMORE. Practically 6,500,000, I am informed by Mr. Beal, my assistant.

Senator SHAFROTH. Do you mean by this 1,250,000 acres that there is that much land withdrawn?

Mr. NARAMORE. It means all the acreage; that is, patented land and all. Of course, the Government withdrawal does not apply to land which is patented.

Senator KENDRICK (referring to map of Wyoming). Is the naval reserve indicated by this yellow, or by the darker lines?

Mr. NARAMORE (indicating). The lower end of it.

Senator KENDRICK. Has any of that land been proven?

Mr. NARAMORE. In the reserve itself I believe there are two or three wells that have reached oil, just as discovery wells; they have never produced to any extent.

Senator KENDRICK. Didn't they drill to sand in one or two places without finding oil?

Mr. NARAMORE. I have no record of that; I do not know. In petroleum reserve No. 3 I have a note here that there were three wells put down; one, 420 feet, in 1911; one, 456 feet, in 1914; that well reached the oil; another in 1915 to 930 feet, which showed a trace of oil. It has been explained to me—I have never been in this field—that the Wall Creek sand would not be encountered there short of 2,500 feet in depth.

Senator HUSTING. What is the significance of that?

Mr. NARAMORE. The Wall Creek sand is where you would expect your big gusher production.

Senator KENDRICK. The Wall Creek sand in Wyoming is about 3,000 feet, is it not?

Mr. NARAMORE. I do not know as to that; I have done no field work in Wyoming.

Senator KENDRICK. Three thousand to three thousand two hundred feet.

Senator HUSTING. Let me ask you whether you know of any difference in depth outside the naval petroleum field and inside. Is there any difference?

Mr. NARAMORE. Yes; there is a very great difference, depending upon where in these sections you go. It begins with depths ranging around 800 or 900 feet, and becomes deeper until you come to the Buena Vista hills, when it goes over in a roll and again in another roll.

Senator HUSTING. I wish you would state whether or not you could reach oil at a higher level outside of the petroleum reserve on the average than you could inside the petroleum reserve. In other words, where can you reach oil the quickest, inside the petroleum reserve or outside?

Mr. NARAMORE. When you consider the number of actual drilling days, they make about as good time in the reserve as anywhere else, because they put the wells down with rotary tools in comparatively short time.

Senator HUSTING. Why couldn't you do that here?

Mr. NARAMORE. They can, but they have not had as much success. Along here [indicating] is a bowlder area, and it is subsurfaced, and it involves increased drilling difficulties.

Senator HUSTING. I will state this another way. Where would it require the greatest amount of piping to develop oil—in the fields outside of the petroleum naval reserve or within?

Mr. NARAMORE. Well, I shall have to qualify my answer again. This area along in here will range from 1,000 to 2,500 feet. In the petroleum reserve it will range from 2,500 to 3,500. Those figures will perhaps apply on the extension of the 35 anticline.

Senator HUSTING. In your first figures you pointed to what? Will you name the fields?

Mr. NARAMORE. There is no big production in there. Some of the larger companies tried hard.

Senator HUSTING. You said "down here."

Mr. NARAMORE. That is in the old Midway field proper.

Senator HUSTING. Now, in the field south of the petroleum reserve?

Mr. NARAMORE. They call that the Sunset field.

Senator HUSTING. There they have to use about as much piping as you do in the reserve?

Mr. NARAMORE. Yes; approximately the same.

Senator WALSH. Mr. Naramore, I wish you would tell the committee whether in your judgment it is possible substantially to increase the California production from sources outside of the naval reserve.

Mr. NARAMORE. That is, provided all the legal difficulties were cleared from all the lands? That is the only way it could be done.

Senator WALSH. Yes. The same difficulties inside as there are outside, I understand.

Mr. NARAMORE. Exactly.

Senator WALSH. Yes; with the conditions cleared away.

Mr. NARAMORE. That is a question, Senator, that is worthy of a great deal of thought and study. Offhand, I would say that there would be some difficulty in being able to get any immediate increase. You would get some little production on the 35 anticline, down near where the Lake View gusher came in, but, on the spur of the moment, I do not think of any other acreage where you could get big production. I mean big flowing wells that would give you the maximum production for the amount of pipe invested. If you had an unlimited amount of casing and an unlimited amount of resources and time you could increase your production, but at a prohibitive cost, by getting a great many strippers, or small wells.

Senator WALSH. Suppose the whole territory were now open to exploitation and development, where would you go to increase the supply?

Mr. NARAMORE. Without any reservations, etc.?

Senator WALSH. Yes.

Mr. NARAMORE. I would go to petroleum reserve No. 2.

Senator WALSH. Suppose that were shut out, that you could not go there?

Mr. NARAMORE. I would go down to the Sunset-Midway field—with the same conditions existing.

Senator WALSH. Yes.

Mr. NARAMORE. A small area down there of three or four sections.

Senator WALSH. Take it within a year. By how much would you think you could increase the California production, leaving the naval reserves intact?

Mr. NARAMORE. I was trying to get out of making that estimate, Senator.

Senator HUSTING. Why?

Mr. NARAMORE. There are so many "ifs" and "ands" to be considered. I have talked to many engineers trying to figure it out. I would not figure that for the whole year we could average much over 12,000 or 15,000 barrels a day increased production. I think we would be fortunate if we got that.

Senator **Walsh**. Have you any ideas about the practicability of reserving the oil in naval reserve No. 2 for the future use of the Navy?

Mr. **Naramore**. Yes, sir.

Senator **Walsh**. I wish you would tell us about that.

Mr. **Naramore**. I have some very definite ideas, but you gentlemen have been told the pros and cons so many times that I hate to enter into the subject if there is any way of evading it. To begin a statement you first have to adopt these surmises that every witness has had to contend with; that is, first, for what period of time the reserve is to be made; whether or not the railroad lands are to be won by the Government or lost; and whether or not you would do it at a prohibitive cost, economically speaking. The reserve as it stands to-day, providing that the Navy would get all of the lands except those which are held in fee, would make a very admirable reserve for the time being—for production at this time.

Senator **Phelan**. That would not be a reserve?

Mr. **Naramore**. No; that would not be in the nature of a reserve, Senator. But there are certain exigencies from the operators' view that are not recognized by engineers and the laymen generally. One is that the wells are not permanent fixtures. A man who has operated in the oil field knows that you can not shut a well in, in the desert region on the west side of California, and go away and leave it. In other words, the wells must be continually produced in order to see when they first make water, and when they make water they must be worked upon immediately. Certain parts of the reserve are already flooded; the north half of the reserve has certain spots that are in a bad way now.

Senator **Shafroth**. By "flooded," you mean surface flooded?

Mr. **Naramore**. No; the water has broken through; casings have been injured or rusted out, and the water has found its way to the oil sands.

Again, the question of whether or not the railroad is to win out is hardly a matter for an engineer to speak upon. I have talked with the representatives of both sides, and both are certain that they are going to win the case and that the other side has no case.

Senator **Walsh**. Just assume that the Government does win, so that it gets the sections marked in red on the map.

Mr. **Naramore**. Then it would be a working field for the Navy for the present time, for the next 10 years, and as long after as they kept the wells in repair; that is, assuming they got that and the other lands too.

Senator **Walsh**. But the question was as to a permanent reserve.

Mr. **Naramore**. It is not a permanent reserve.

Senator **Walsh**. Why not?

Mr. **Naramore**. Well, to begin with, to get a large production in a short space of time you must have the help of the gas. I do not mean by that necessarily only the gas to blow the oil out of the hole, but the gas to bring the oil from the interstices of the sand to the well so as to make it possible for you to lift the oil to the surface, and the very moment you put a hole into the oil sand the gas begins to escape. To demonstrate that I would like to ask the committee to stand beside one of those wells when the gas is blowing freely from it, making from 20,000,000 to 40,000,000 cubic feet per day. They would more readily realize what that pressure is; for it is the pressure in the oil sands that makes the reserve valuable; that is, the agent that brings each little particle of oil to the well. And every year that passes, that gas pressure is reduced, so that your ultimate recovery from the sands will be dependent upon the volume of gas retained at its maximum pressure; and with the number of wells now drilled in the northern half of the area there, it will never make a safe permanent reserve. I do not believe anybody has ever maintained that it would.

Senator **Walsh**. You say that nobody has ever maintained that it would make a permanent reserve?

Mr. **Naramore**. Not a permanent reserve; they are all asking for it for a working reserve.

Senator **Walsh**. Just what do you mean?

Mr. **Naramore**. To be developed right now.

Senator **Walsh**. Are we to understand that there is a perfect unanimity of opinion among geologists and expert oil men that it will be valueless at the end of 10 years?

Mr. **Naramore**. Oh, not valueless; those wells will be producing for 25 years, but there will be a greatly reduced production. From the day a well is brought in the production begins to diminish. The rate of decline is influenced by the number of wells near by, the original gas head, and a number of other physical factors.

Senator **Shafroth**. In other words, you have got to produce the oil while the gas is on?

Mr. **Naramore**. To get the maximum economical recovery.

Senator **Walsh**. To put it another way then, if the oil is not taken from the reserve within a period of 10 years its value will be very largely diminished at the end of that time?

Mr. **Naramore**. Well, I take it for granted that the production will go on with the wells that are now completed or drilling. I do not believe that I exactly understand your question, Senator.

Senator **Walsh**. As I understand you, the wells that are drilled must be kept in operation now?

Mr. **Naramore**. For the best economical results they should be operated continuously.

Senator **Walsh**. What would be the harm in quitting them all? Why not plug them all up?

Mr. **Naramore**. Why, it costs from $20,000 to $40,000 apiece to put them in, and if you plug them all up they are ruined.

Senator **Walsh**. But the oil is in the ground?

Mr. **Naramore**. There are wells in there that the operators can not repair except at a prohibitive cost, and if those wells are not repaired they will do untold damage from water infiltration over a period of years.

Senator **Walsh**. So that really to plug the wells up would be to destroy the reserve?

Mr. **Naramore**. Yes; in a measure.

Senator **Husting**. Why does it destroy them if you just cap them and make them gas tight?

Mr. NARAMORE. If your gas would last indefinitely, if all the wells now there had perfect water shut-offs, that would be perfectly feasible; but unfortunately we have not operated in an ideally perfect fashion. We have operated in the best manner that the industry knew, but there are certain happenings in the development of an oil field that are beyond the control of man. You see, you are doing the work at the end of a wire rope three-quarters of a mile or a mile in length in a small hole, and you sometimes make mistakes.

Senator HUSTING. How long does it take for a pipe to rot out?

Mr. NARAMORE. We have records that show that it sometimes rots out in as short a time as 3 years; sometimes 8 years. Some pipe has been in the ground 15 years and is still sound.

Senator SHAFROTH. Mr. Naramore, how long have you been connected with the Bureau of Mines?

Mr. NARAMORE. Since last October; the 1st of October, 1916.

Senator SHAFROTH. What was your business before that?

Mr. NARAMORE. Petroleum engineer.

Senator SHAFROTH. What part of the country were you operating in?

Mr. NARAMORE. California and Canada.

Senator SHAFROTH. Who preceded you in that office?

Mr. NARAMORE. Mr. W. A. Williams.

Senator SHAFROTH. Is it not a fact that your bureau when it learned of the discovery of an oil well that would pay would proceed to map out an area for reservation by the Government and try to reserve all that they thought would be affected in that area?

Mr. NARAMORE. The Bureau of Mines does not recommend withdrawals; that is done by the Geological Survey. It is their duty to make the reservations.

Senator SHAFROTH. But that is the fact, is it not?

Mr. NARAMORE. I have heard that statement in the oil fields a great many times, that when an individual would find a well the Government would withdraw it.

Senator SHAFROTH. Would withdraw the lands surrounding it?

Mr. NARAMORE. But I do not know the facts and figures to back it up.

Senator SHAFROTH. If that were a fact, it would of necessity discourage the production of oil very much, would it not?

Mr. NARAMORE. Most assuredly.

Senator SHAFROTH. And it would prevent the sinking of any other wells in that locality, would it not?

Mr. NARAMORE. Yes, sir.

Senator SHAFROTH. Do you think it is fair after a man has located, under the placer-mining act, a piece of land that becomes valuable, that is supposed to be valuable for oil, and spends money on it, that a reserve should be made covering that, and if he has not struck oil in commercial quantities that he should lose his right?

Mr. NARAMORE. That is a question for Mr. Tallman's office. I have my personal opinions, but I do not want to speak as an official of the Department of the Interior on that.

Senator SHAFROTH. It strikes me it is very unfair to do that. The man has expended money in good faith, and no reserve ought to interfere with his developing it and finally getting a patent to his land.

Mr. NARAMORE. I was with the Geological Survey when these reserves were made years ago, and I had a very different opinion of what the function of the reserve was at that time. I was a strong advocate for making the reserves, and I anticipated that the general theory of the reserve in 1909 and 1910, at least as I interpreted it, was that the development of the lands should be deterred as much as possible by these reserves; not that the Government would ultimately develop them but that they would ultimately be leased to people to develop. It was to prevent all of the oil from coming onto the market at once, as it promised to do at that time. The quantity of oil that was being developed in 1909 and 1910 was indicative of great waste. A statement like that, however, coming from me has no weight, because I was not in an executive position at that time.

Senator SHAFROTH. There has been an oil withdrawal for naval purposes, I think, in Colorado recently, has there not?

Mr. NARAMORE. Yes, sir; a shale withdrawal.

Senator SHAFROTH. I wish you would tell us concerning the shale withdrawals, as to whether they are going to produce the quantity of oil that is estimated. Did you make the estimate of the quantity of oil that could be produced from the Colorado wells?

Mr. NARAMORE. No; the Geological Survey made the estimate.

Senator SHAFROTH. They made the estimate that 20,000,000,000 barrels could be produced from that?

Mr. NARAMORE. Yes, sir.

Senator SHAFROTH. Have you examined it to see whether that is reasonably certain or not?

Mr. NARAMORE. No; I have not, but I have no reason to doubt their figures, because in talking with the gentlemen who made the estimates I was informed that they considered only the beds that were 3 or 4 feet in thickness or over. They did not take into consideration the smaller beds, so it seems a safe assumption. And that oil is not migratory; it will never move a fraction of an inch; it will stay put.

Senator SHAFROTH. That can be kept there an indefinite length of time without loss, then?

Mr. NARAMORE. It has probably been there a million years already.

Senator SHAFROTH. Are there any by-products that come from the production of oil from shale?

Mr. NARAMORE. Yes, sir.

Senator SHAFROTH. Will you tell me what they are, please?

Mr. NARAMORE. Ammonium sulphate is, I think, the chief by-product to-day; it is used for fertilizing purposes.

Senator SHAFROTH. Is there any sulphuric acid that comes from it?

Mr. NARAMORE. I do not know of any.

Senator SHAFROTH. What amount of ammonia would come from it, do you think?

Mr. NARAMORE. That has varied with the various tests that the laboratory staff of the Bureau of Mines has made for the Geological Survey, but we figure it would in part pay for the cost of operating.

Senator SHAFROTH. In part?

Mr. NARAMORE. Yes.

Senator SHAFROTH. How near the cost of operating do you think the by-products would amount to?

Mr. Naramore. We could not agree in conference on that. The men sitting in conference thought that all the way from 40 cents to 80 cents a ton could be recovered in by-products.

Senator Shafroth. What portion would that be of the production, say, of a barrel of oil or any quantity of oil?

Mr. Naramore. That would depend upon the richness of the shale. Shales run all the way from 20 gallons to 80 gallons to the ton. Assuming they run 42 gallons, that would be one barrel to the ton; that would be about 25 per cent.

Senator Shafroth. About 25 per cent would be recovered in the shape of by-products, you think?

Mr. Naramore. Yes, sir.

Senator Shafroth. For the cost of working?

Mr. Naramore. Yes, sir.

Senator Shafroth. What did you estimate would be the cost of producing oil out of those shales in Colorado?

Mr. Naramore. That is another open subject. I heard the figures given by the commander this morning, of $4.

Senator Shafroth. Would any such amount as that be required, do you think?

Mr. Naramore. Well, our estimates do not match that.

Senator Shafroth. What were your estimates?

Mr. Naramore. We figured it would cost about $1.85 a ton; but, of course, to handle the shale at all you must handle it on a very, very large scale, so that your mining and your reduction plant must be large.

Senator Shafroth. A dollar and eighty-five cents a ton, then, would be really $1.85 a barrel?

Mr. Naramore. Yes, sir.

Senator Shafroth. One ton to the barrel is the usual estimate, is it?

Mr. Naramore. That is arbitrary; we have taken that figure so as to begin figuring on the commercial phase of the industry.

Senator Shafroth. So that, put to the very lowest extreme, they could produce 20,000,000,000 barrels of oil at a rate of $1.85 per barrel, could they not, from this shale?

Mr. Naramore. Not immediately.

Senator Shafroth. But ultimately they could?

Senator Husting. Twenty million or twenty billion?

Senator Shafroth. Twenty billion, which we have got locked up in our State now. I want to show how we can get it released.

Mr. Naramore. Now, you want to put in a factor of time.

Senator Shafroth. I recognize that.

Mr. Naramore. The Bureau of Mines is studying that problem right now.

Senator Shafroth. Ultimately, though, it might come to the fact that we could produce almost an unlimited quantity of oil from that shale at a cost of about $1.85, and if you deduct the 25 per cent it would be about $1.30 a barrel, would it not?

Mr. Naramore. For the purposes of making estimates you had better make it $2 a ton. Some time ago we figured that when gasoline was sold for 35 cents a gallon people would begin to look into the shale industry. They would then take the richest shales and work the thickest measures first.

Senator Shafroth. Now, you would get gasoline from this shale?

Mr. Naramore. Yes, sir.

Senator Shafroth. And you would also get the oil that is used in steamships, would you?

Mr. Naramore. In part, if you care to use it for that.

Senator Shafroth. Do you know how much oil land has been withdrawn in Colorado?

Mr. Naramore. No; I do not.

Senator Shafroth. Have you a map of Colorado there?

Mr. Naramore (exhibiting a map). That map is pretty nearly a year old now.

Senator Shafroth. That does not contain this 20,000,000,000-barrel field? That is up here in Routt County, is it not?

Mr. Naramore. Yes; very close to the Utah line, and in Rio Blanco and Garfield Counties.

Senator Shafroth. Yes; Moffat County, then, it would be? I only hope it will materialize, but I do not like it to be reserved. I think if they would let the people go in there and try to develop a process they would get a large quantity of oil that would relieve the situation.

Senator Husting. How about the number of men it would take to mine that shale?

Senator Shafroth. Oh, well, in times of peace we like to have plenty of employment for men. That is one of the objects we would have.

Mr. Naramore. I might say at the present time there is some of the shale being mined by citizens of Colorado, just on a small scale. To handle that shale product commercially you must have tremendous plants.

Senator Shafroth. Of course, we are at a disadvantage because of having no railroad facilities. The Moffat road is intended to go there. Although it has gone 200 miles, it has probably got to go 250 miles to reach this oil field.

Mr. Naramore. I am acquainted with that fact, because I made a line of locations over the Continental Divide for the Moffat road to protect a tunnel site.

Senator Shafroth. Is there a railroad called the Uintah Road?

Mr. Naramore. I am not familiar with it.

Senator Shafroth. There is a road from Mack, Colo., up through the Uncompahgre Indian Reservation that goes up there somewhere. Are these shale lands near that?

Mr. Naramore. I do not know.

Senator Husting. How is this shale mined?

Mr. Naramore. You mine it as you would coal.

Senator Husting. It takes just as many men to mine it?

Mr. Naramore. Yes, sir.

Senator Husting. Somebody made the remark it would take as many men to mine it as to mine the coal we are using.

Mr. Naramore. In some cases it might be done by steam shovel, but most of that is a very tough shale and will have to be picked.

Senator Husting. How long have you been with the service, Mr. Naramore?

Mr. NARAMORE. The Bureau of Mines? Since last October.

Senator HUSTING. And you say you have been in the Canada and California oil fields?

Mr. NARAMORE. Yes, sir.

Senator HUSTING. Who were you with there?

Mr. NARAMORE. In California I was with the W. P. Hammond interests—first I was with the Associated Oil as field geologist in the Midway field.

Senator HUSTING. That is in California?

Mr. NARAMORE. Yes. Then I went to Coalinga to take charge of the properties of the W. P. Hammond interests. I was there until January, 1914, until I went down to Ventura to take charge of their properties there. I operated there until July, 1914, and then went to Calgary, Canada, at the time of the oil excitement there, to take charge of the Dingman wells there. I remained with them until the following September, and returned to California to assist in the establishment of the new work for the State mining bureau.

Senator HUSTING. For the State of California?

Mr. NARAMORE. For the State of California. I was there just one year.

Senator HUSTING. How did you come to join the Bureau of Mines there?

Mr. NARAMORE. For years I had been advocating the conservation of the oil by excluding the water, and when they started to organize that work they asked me to come and help.

Senator HUSTING. I meant to ask how you came to join the Federal service.

Mr. NARAMORE. I joined the Federal service to issue a technical paper for the Bureau of Mines on drilling methods. My idea was that I would be with the Bureau of Mines just a short time to write this paper, but in the meantime Mr. W. A. Williams left the service, and Director Manning called me to Washington, as I thought, temporarily, but he has kept me here ever since.

Senator HUSTING. You are not connected with any of these companies at this time?

Mr. NARAMORE. No; I have not been with any California company for two years.

Senator HUSTING. Are you a native of the United States?

Mr. NARAMORE. Yes, sir.

I have been attending all these hearings and listening attentatively, and, as a patriotic American, I think it is my duty in a measure to correct the sense of some of the statements that have been brought forward; not that they have been brought forward with the idea of leading anyone astray, but very often in answering a direct question you leave an impression you do not intend.

One of those is as to the quality of the oil. It is generally understood by most of the people that the Navy now wants only fuel oil. That is in a measure correct, and in a measure it is wrong, because the small craft being built by the Navy and the aeroplane service of the Navy are going to be large consumers of gasoline, and we ought to conserve our gasoline for the Navy. By that I mean that the Navy will ultimately come to use internal combustion engines wherever feasible, because the use of fuel oil under boilers is uneconomic. Our Navy does it because other navies do it, and you must be able to make steam fast; but ultimately oil will be so valuable, in my opinion and the opinion of all my associates, that it will be used in internal-combustion engines only.

Senator Shafroth. There is a great saving in that, is there?

Mr. Naramore. Yes, sir; a saving of about 3 to 1.

Senator Phelan. How do you propose it shall be done? By legislation?

Mr. Naramore. It won't be done by legislation, Senator; it will be done by the development of the mechanical features of the engines, etc. Before this war has progressed another year—it may seem like a wild statement now, but the Navy will probably be using a tremendous quantity of the lighter distillates—gasoline and kerosene. And ultimately in the years to come they will want the lighter products as well as the heavy fuel products.

Senator Phelan. Is it practicable for the Navy to store the oil for the purpose of extracting these valuable components?

Mr. Naramore. It is not good practice to store the lighter products, but it would be practicable to store the fuel oil.

Senator Phelan. Would that be desirable legislation?

Mr. Naramore. It certainly would. And buy all the foreign oil you can buy and give it to the Navy.

Senator Phelan. Our purpose has always been to encourage development, and so far as reserve No. 2 is concerned, the only opposition that has arisen is due to the fact we were not convinced that there was safe storage in the ground. I stated here in the testimony to-day that I believed that was the consensus of the best expert opinion. What is your judgment as to that?

Mr. Naramore. There I shall have to answer conditionally. The element of time comes in again. It is for present storage. As a matter of permanent storage it is a thing of the past.

Senator Phelan. That means you have lost the opportunity of making it a permanent reservoir?

Mr. Naramore. Yes.

Senator Phelan. I desire for the benefit of the new members of the committee to insert in the record the so-called Phelan amendment, brought in question here to-day, dated January 4, 1917, which offered a solution of the problems which have arisen in naval reserve No. 2.

(The amendment referred to is here printed in full, as follows:)

That upon relinquishment to the United States within ninety days from the date of this act or within ninety days after final denial or withdrawal of application for patent, of any claim or subdivision thereof asserted under the mining laws prior to July third, nineteen hundred and ten, to any unpatented oil or gas lands included in any order of withdrawal or within naval petroleum reserve numbered two, the claimant shall be entitled to a lease for each asserted mineral location of one hundred and sixty acres or less or any subdivision thereof upon which such claim is based and upon which said claimant, his predecessors in interest, or those claiming through or under him, have, prior to the date of this act, drilled one or more producing oil or gas wells, such lease to be upon a royalty of one-eighth of the production of oil or gas produced and saved therefrom after first deducting from the gross production such oil or gas as may be used in development and operating such land, and otherwise on the same terms and conditions as other oil and gas leases granted under the provisions of this act: *Provided*, That within ninety days from date of this act or of final denial or withdrawal of application for patent the applicant for a lease shall pay to the United States for one-eighth of the oil or gas produced and saved from the lands included in said claim subsequent to February twenty-third, nineteen hundred and fifteen, at the current field price at the time of production, which shall be in full satisfaction for all oil or gas extracted from said land prior to said lease: *Provided further*, That all royalties received under the provisions of this section from said naval petroleum reserve numbered two, whether in oil or money, shall be delivered or credited to the United States Navy: *And provided further*, That none of the provisions of this section or of this act shall be applicable to or affect lands or minerals included within the limits of naval petroleum reserve numbered one, in the State of California, or naval petroleum reserve numbered three, in the State of Wyoming: *Provided further*, That upon application for a patent or lease being made under the provisions of this act proceedings in all court actions commenced, or which may thereafter be commenced, by the United States affecting the lands for which patent or lease is applied for shall be stayed until the Secretary of the Interior shall have finally passed upon said application, and in the event that he shall determine that the applicant is entitled to a patent or lease, then, and upon the issuance of the same, such action shall be dismissed.

Senator WALSH. Mr. Naramore, are we to understand that your suggestion, so far as naval reserve No. 2 is concerned, is that the oil should be taken out as speedily as possible and stored for the use of the Navy?

Mr. NARAMORE. No; not necessarily taken out as speedily as possible, unless it appears to be necessary to meet an emergency. But the work should be continued so as to know the exact condition of each well, and in case a well leaks it should be worked upon immediately.

Senator WALSH. What would you do with the oil extracted?

Mr. NARAMORE. It would go into commerce.

Senator HUSTING. When you say that as a permanent reserve that has gone by, do you include the lands that are now in dispute with the Southern Pacific Railway Co.?

Mr. NARAMORE. Yes; taking it as a whole.

Senator HUSTING. That map right there?

Mr. NARAMORE. Yes; there are some portions on that map, this lower end, that are not so susceptible to drainage as the upper half; but there is section 10, which is patented in fee, and No. 16, just below, patented in fee, and a quarter section above. To make that a permanent reserve the Government should buy those lands for the Navy.

Senator HUSTING. Which lands?

Mr. NARAMORE. All the patented lands except 16.

Senator HUSTING. And then what?

Mr. NARAMORE. And then work the wells that are already drilled at their minimum economic production, and have competent men in charge so that if anything should go wrong with any of the wells they would be able to repair the wells.

Senator HUSTING. And then take out the lighter distillates and store the oil?

Mr. NARAMORE. You see, there you bring in the question of transportation. The need of the Navy just at the present time for all these fuels is on the Atlantic coast. You could probably purchase in the open market better than I could purchase out there and ship it across the continent.

Senator HUSTING. Have you familiarized yourself with the subject enough to know how the Navy could best take care of its oil supply? Have you made a special study of naval requirements?

Mr. NARAMORE. No; not exactly; but since last fall we have been designing storage and working up the general features, so that if we are called upon by the Navy we can give them information. We have no authority to volunteer anything to the Navy.

Senator HUSTING. I assume that you would be willing to admit that the men who make their special business the Navy are better informed on that than you are?

Mr. NARAMORE. I will not; I will not admit it. I think I have some of the best technical men in the United States in my division.

Senator HUSTING. I mean as to the requirements of the Navy.

Mr. NARAMORE. Oh, as to the Navy, they are the only people who have that. We would go to the Navy and ask them for such figures as they had.

Senator WALSH. What you mean to say is that you are the best informed concerning supplies and the availability of those supplies?

Mr. NARAMORE. Yes, sir.

The ACTING CHAIRMAN. If that is all this afternoon, the committee will stand adjourned until Wednesday, at 11 o'clock a. m.

(Thereupon, at 4.20 o'clock p. m., the committee adjourned to meet Wednesday, June 27, 1917, at 11 o'clock a. m.)

X

Separate

FEB 18 1919

LEASING OF OIL LANDS

HEARINGS

BEFORE THE

COMMITTEE ON PUBLIC LANDS
UNITED STATES SENATE

SIXTY-FIFTH CONGRESS

FIRST SESSION

ON

S. 45

A BILL TO ENCOURAGE AND PROMOTE THE MINING OF
COAL, PHOSPHATE, OIL, GAS, POTASSIUM, AND
SODIUM ON THE PUBLIC DOMAIN

JUNE 27, 28, 1917

PART 5

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LEASING OF OIL LANDS.

WEDNESDAY, JUNE 27, 1917.

UNITED STATES SENATE,
COMMITTEE ON PUBLIC LANDS,
Washington, D. C.

The committee met, pursuant to adjournment, at 11 o'clock a. m., in the committee room, Capitol, Senator Key Pittman presiding.

Present: Senators Pittman (acting chairman), Phelan, Husting, Shafroth, Kendrick, Sterling, Kellogg, and McNary.

The committee resumed the consideration of the bill S. 45, "a bill to encourage and promote the mining of coal, phosphate, oil, gas, potassium, and sodium on the public domain."

The ACTING CHAIRMAN. In the absence of Senator Myers, chairman of the committee, I will call the committee to order.

I see that the Attorney General is here this morning, and I know that the members of the committee will be very glad to hear from him.

Mr. Attorney General, while the bill that is pending before the committee does not deal with naval reserves, nevertheless, the committee has been discussing the necessity of providing some legislation whereby the oil lands in the reserves may be utilized.

Here is an amendment by Senator Phelan that he proposes to offer to the bill, which will undoubtedly interest the Department of Justice, and it is probably the reason why you were invited to be here. I will read it, with the consent of the committee [reading]:

SEC. 16. That upon relinquishment to the United States within ninety days from the date of this act or within ninety days after final denial or withdrawal of application for patent, of any claim or subdivision thereof asserted under the mining laws prior to July third, nineteen hundred and ten, to any unpatented oil or gas lands included in any order of withdrawal or within naval petroleum reserve numbered two, the claimant or his successor in interest shall be entitled to a lease for each asserted mineral location of one hundred and sixty acres or less or any subdivision thereof upon which such claim is based and upon which said claimant, his predecessors in interest, or those claiming through or under him, have, prior to the date of this act, drilled one or more producing oil or gas wells, such lease to be upon a royalty of one-eighth of the production of oil or gas produced and saved therefrom after first deducting from the gross production such oil or gas as may be used in development and operating such land, and otherwise on the same terms and conditions as other oil and gas leases granted under the provisions of this act: *Provided, however,* That no claimant who has been guilty of fraud in the location of any oil claim or gas-bearing lands shall be entitled to any of the benefits of this section, nor shall any person who acquired such land with actual knowledge of such fraud be entitled thereto: *Provided further,* That upon the issuance of said lease and prior to the delivery thereof the applicant therefor shall pay to the United States for one-eighth of the oil or gas produced and saved from the lands included in said claim subsequent to February twenty-third, nineteen hundred and fifteen, at the current field price at the time of production, which shall be in full satisfaction for all oil or gas extracted from said land prior to said lease: *Provided further*, That all royalties received under the provisions of this section from said naval petroleum reserve numbered two, whether in oil or money, shall be delivered or credited to the United States Navy: *And provided further*, That none of the provisions of this section or of this act shall be applicable to or affect lands or minerals included within the limits of naval petroleum reserve numbered one, in the State of California, or naval petroleum reserve numbered three, in the State of Wyoming: *And provided further*, That when a patent or lease has been or may be hereafter applied for under the provisions of this section, proceedings in all court actions commenced or which may thereafter be commenced by the United States affecting the lands or the product thereof for which patent or lease is applied for shall be stayed until the Secretary of the Interior shall have finally passed upon said application, and in the event that he shall determine that the applicant is entitled to a patent or lease, then, and upon the issuance of the same, such action shall be dismissed.

That is, generally speaking, the subject we have been discussing. We have not discussed this particular amendment.

Senator SHAFROTH. We have discussed generally the production of oil and the necessity for it.

The ACTING CHAIRMAN. That amendment has not yet been offered. I think it would be well to call your attention to certain facts.

The main thing we have been discussing is the necessity of the Navy, or the Government, and the industries of the country, for a greater production of oil, and the places where it can be obtained.

Mr. Doheney testified before this committee a few days ago. He is a large operator in this country and Mexico, probably the largest oil operator in the United States, if not in the world. The testimony that he has given tends to show that the Mexican supply of oil is very uncertain by reason of political conditions; that the supply in this country is uncertain; that the production is not increasing with the demand; that the ratio of difference is increasing steadily. He gave it as his opinion that, by reason of the immediate demand for oil and the scarcity of tubing and piping needed in the production of oil, the Government should insist that the material necessary for the production of oil be utilized in the known fields and not for prospecting purposes. He has given it as his opinion that the fields that show a large supply of oil, that are close to transportation, and that may be readily used for increasing production are in the vicinity of and are included in naval reserve No. 2. It is his opinion that it is a governmental necessity to increase the production of naval reserve No. 2 and the withdrawn area adjacent thereto.

He has given it as his opinion that he knows of no other place in the United States available where the production can be immediately increased. That is the question submitted to the committee.

The ATTORNEY GENERAL. I had a note from the committee, Mr. Chairman, last Friday, I believe it was, asking if I would appear before it to discuss bill S. 45, which was a general measure with reference to development. I looked over the bill and I wrote a letter, doubtless considered by the committee, in which I stated that after looking over the bill I had found nothing relating to any matters with which my department had been connected. I stated also that I would be glad to appear later if there were any matters about which my opinion would be valuable, or in regard to which I could be of any help to the committee.

I do not believe I can do anything more at this time, Mr. Chairman, than to briefly state the policy of my department in regard to these withdrawals.

I think there is a slight misapprehension as to some of the decisions rendered, and as to their effect. So far as the economic questions are concerned, I know very little about them. I do not care to put myself in the attitude of being an adviser to this committee, or anyone, in regard to the question of oil production, because what I know of that feature of the situation is what has come to me incidentally in the matter of the litigation over these oil lands. The matter of the policy of maintaining the naval reserve is a general policy for Congress and the different branches of the administration to deal with, but is not related to my department. My duty has been wholly and solely to protect the interests of the Government of the United States under the laws as they are written on the statute books. That I have attempted to do, and that I shall continue to do, until the laws written on the statute books are changed. With that preliminary statement I can, in a few moments, give you some information which I think may be helpful to the committee.

At the time of the Midwest Oil Co. decision in February, 1915, five suits had been brought. That was taken up as a test case, and I believe no steps were taken in the other four cases, while awaiting the decision in that case. That case was decided February, 23, 1915.

With the exception of the five suits then pending, including the Midwest Oil Co. case, all the suits brought under the withdrawal order, have been brought since February, 1915, or within two years and four months. The department has instituted 74 suits involving approximately 13,220 acres of withdrawn oil lands. Three of those suits concern lands in the State of Wyoming, in the Wyoming reserve, which is naval reserve No. 3. Five were brought prior to the decision in the Midwest Oil Co. case, and the rest have been brought since. Seventy-one of the suits involve lands in the southern district of California.

Two of the suits affect 320 acres of land in naval petroleum reserve No. 1, and 46 involve 8,160 acres in naval reserve No. 2, in California.

Twenty-three suits relate to some 4,700 acres of oil in California not included in either of the naval reserves, all of which, however, except 1,120 acres lie adjacent to naval reserve No. 2. The information that my department has is derived from facts developed in this litigation and from reports given out from time to time by the Department of the Interior.

I think I can safely state that naval reserve No. 2 substantially includes all of the naval reserve land absolutely proven to have a high commercial value; and that the land within naval reserves Nos. 1 and 3 is of less importance and problematical, as far as results are concerned. Details of that kind can be furnished you by my assistant here.

Naval reserve No. 2, as I understand it, represents proven, established oil territory of great value where we know oil is; and, consequently, the number of suits brought is vastly greater in that reserve than in the others, as the necessity for protecting that reserve and establishing the policy of the Government was greater for the reason that it was a reserve of value.

In two suits, one in Wyoming and one in naval reserve No. 2, California, there have been decisions on the merits adverse to the Government. The court has held that, under the facts in the case as developed there, the Government had no title.

The ACTING CHAIRMAN. What case is that?

The ATTORNEY GENERAL. One is the Ohio Oil Co. and Grass Creek Oil Co. case, the other is the decision of Judge Bean, in California, with reference to section 2 of the naval reserve in the case of the United States against the North American Oil Co.

Those suits in which a decision adverse to the Government has been rendered were lost because the court held that under the established facts the claimants were entitled to the benefits of the proviso of the Pickett Act.

The ACTING CHAIRMAN. Those cases involved the construction of "due diligence" under the act.

The ATTORNEY GENERAL. As applied to the facts in these particular cases, yes. The court held that the facts as developed established due diligence which entitled them to protection under the Pickett Act.

Senator HUSTING. Was the question of fraud involved in those cases?

The ATTORNEY GENERAL. No, sir. I do not understand so.

In three suits the district court has decided that where applications for patent are pending and the final certificates have been issued by the Interior Department the court has no jurisdiction to determine the claims on the merits, as that must be done in the Land Department. In those three cases, therefore, the court declined to entertain jurisdiction.

The ACTING CHAIRMAN. How will that affect the Honolulu case?

The ATTORNEY GENERAL. I do not believe it will affect the Honolulu case. The theory of the Honolulu case is that it involves what is sometimes spoken of as the group or seriatim theory. In the Honolulu case an ancillary proceeding was brought, asking for a receiver and protection of the field and the development thereof. In the application for receiver a presentation and establishment of a prima facie case on the part of the Government is required. We anticipate in that case the court will decide, as Judge Bean has practically decided, I think, in the case to which I shall refer in a moment or two, that the group theory, applied to the facts in the Honolulu case, did not entitle them to patent. I want to say, in connection with that Honolulu case, that there is a principle involved there which has wide application and will apply to a very large amount of land. The decision of the Commissioner of the General Land Office in the Honolulu case, as originally rendered, if followed would, in our judgment, affect such a large amount of property claimed by the Government, amounting to many millions of dollars. We therefore felt that a judicial determination and construction of the proviso of the Pickett Act, as applied to facts of that kind, should be secured from the courts. The proceeding in the Honolulu case was instituted for that purpose, in order to secure from the court a construction of the proviso of the Pickett Act. I believe it has largely been procured from the decision of Judge Bean.

The ACTING CHAIRMAN. Is there not a distinction between the jurisdictional question in the case where Judge Bean has rendered his decision and——

The **Attorney General.** The case in which he declined to assume jurisdiction was one where an injunction and accounting was sought, and he evidently determined that in order to grant the relief prayed for in that case it was necessary to pass upon the merits.

The **Acting Chairman.** The case I have in mind is that the court declined to take jurisdiction on the ground that it was before the Land Department on application for patent.

The **Attorney General.** Yes.

The **Acting Chairman.** That was the distinction between the two.

The **Attorney General.** In the Honolulu case it was an ancillary proceeding involving the appointment of a receiver for the purpose of protection pending decision by the Land Office. In securing action upon that we will assume that the court will determine whether we make out a prima facie case entitling us to a remedy in that suit.

The **Acting Chairman.** Is that as far as the court can go in the Honolulu case?

The **Attorney General.** Mr. Chairman, I have long since ceased to say how far a court would go. We shall get all the expressions we can in order to clarify the law in that case.

The **Acting Chairman.** The final decision has ultimately to come back to the Department of the Interior?

The **Attorney General.** I assume that the Department of the Interior will obey the law as the court writes it.

The **Acting Chairman.** But the court has no jurisdiction to write the law.

The **Attorney General.** Under the facts in the Honolulu case I can not but assume that the Department of the Interior will obey the law as it is written.

The **Acting Chairman.** But, if the Interior Department has sole jurisdiction to determine these facts the court has only ancillary jurisdiction in determining whether the property will be preserved pending the determination of the Department of the Interior, certainly that department would not be required to follow the arbitrary advice of the court.

The **Attorney General.** I do not regard the decision of the court as an arbitrary thing. I regard it as the highest expression of the law of the land, and I assume that every department will follow the law as announced.

The **Acting Chairman.** If the court has no jurisdiction to determine the merits?

The **Attorney General.** Oh, the merits! I think, Mr. Chairman, if we brought suit in court for title to this land against the Honolulu Co. it would be very likely that the court would say that that issue is pending before another tribunal, the Interior Department.

Senator **Shafroth.** And would not pronounce on it at all?

The **Attorney General.** Yes. The point is this: While the matter is pending the oil is being removed from the property, and we ask that the property be protected. The court will necessarily hear the testimony in order to see whether we can make out a prima facie case which entitles us to the protection which we are seeking. The Honolulu Co. will have its day in court and present its side. If the court, in passing upon the facts, holds that the group theory, which they represent is contrary to law, I repeat that we must assume that the executive departments will follow that decision.

The ACTING CHAIRMAN. Let me see if I understand you. My reason for considering this material is this: The Government, so far as the court proceeding goes, has lost section No. 2. The result in the Honolulu case will affect reserve No. 2. Therefore it is certainly proper for this committee to investigate the probability of the recovery by the Government in that reserve, because, if the probabilities are that the Government will recover there, the Government would certainly be in better shape if it obtained a royalty out of the oil in the land rather than lose it all. That is the reason I am inquiring about it. The situation is this: I think it is admitted, so far as the decisions of the courts of California go, that all the jurisdiction of the court in the Honolulu case is for the purpose of protecting the property pending a determination of the application for patent. That is what you are now seeking. The court has no jurisdiction under that condition to pass upon the merits, but the Department of Justice is attempting to get a decision in an ancillary proceeding. Now, it seems to me that it would require less evidence to grant an injunction, or appoint a receiver for the preservation of the property, than it would to determine the title to the property. The court in California, it seems to me, could very readily grant an injunction or a receiver to protect the oil in the ground without having evidence sufficient to convince it that the Government would ultimately be successful.

Therefore the decision of the court, if it should be granted, placing in charge a receiver and enjoining the working of it, would not be conclusive with the court if it had to try it on its merits to determine that the Government owned the land. Yet, upon that decision, the Department of Justice hopes that the Department of the Interior, which has the exclusive jurisdiction in determining title, will be governed in its determination by the determination in the ancillary proceeding for injunction or a receivership. I take it that the Department of the Interior is not required to follow the determination even of the law or the facts found by the court in an ancillary proceeding where such determination does not go to the extent of determining title, or where the court has no jurisdiction to determine title. That is my view. Therefore I was asking you with regard to the Honolulu decision, to see whether the Department of the Interior did not have exclusive jurisdiction.

The ATTORNEY GENERAL. Your question comes to this: Has the Interior Department the right to violate the law as announced by the courts? Such power may exist, but I shall not take time to debate that question.

The ACTING CHAIRMAN. Would it be a violation of law for the Interior Department to refuse to follow the law laid down by a court that had no jurisdiction to make the decision?

The ATTORNEY GENERAL. I would dislike to be in the Interior Department and to assume a position in violation of the law of the land.

The ACTING CHAIRMAN. Do you mean to say that a decision rendered by a court in a matter beyond its control is binding?

The ATTORNEY GENERAL. I will not say "binding." I am assuming that the court assumes jurisdiction. This is a matter, of course, that can be appealed and taken to the highest court. I do not think that any executive department or body would refuse to obey.

Senator WALSH. What I understand from your statement is that in the exercise of its ancillary jurisdiction the court may be called upon to pass upon some principle of law applicable?

The ATTORNEY GENERAL. Exactly. I think it would have to.

Senator WALSH. And your contention is that its conclusion concerning the principle of law then involved in the ancillary proceeding would be persuasive and, possibly, controlling on the Interior Department.

The ATTORNEY GENERAL. I should say it would be illuminating, and I would expect it to be followed.

Senator WALSH. And you would not feel that any determination of the facts would be in any way conclusive?

The ATTORNEY GENERAL. Oh, no.

Senator WALSH. But you would expect to get a construction of the act in the ancillary proceeding and an announcement of the principle of law?

The ATTORNEY GENERAL. That is the general idea I had in mind.

Senator PHELAN. What form of action is the prosecution against the Honolulu Co.?

The ATTORNEY GENERAL. It is a bill in equity for the appointment of a receiver. As I stated a few minutes ago, it is for the purpose of protecting the property by the appointment of a receiver pending the disposition of the application for patent by the Interior Department.

Senator PHELAN. That is the only action that has been brought?

The ATTORNEY GENERAL. There are several suits.

Senator PHELAN. How are you going to get a determination of the merits on the facts before the court if the court has declared that it has no jurisdiction?

The ATTORNEY GENERAL. You gentlemen confidently assume that it has no jurisdiction. If it has no jurisdiction, of course, I will not get it.

Senator PHELAN. I thought that recent decision showed that.

The ATTORNEY GENERAL. No, sir.

The ACTING CHAIRMAN. Here is Judge Bean's decision. It touches that question. It is No. A–38, in equity, United States *v.* Thirty-two Oil Co.

Senator WALSH. I think it is perfectly well established under the authorities that the Land Department has exclusive jurisdiction to determine the existence of facts upon which the right to a patent is based. Of course, no court is entitled to take jurisdiction and try out a question involving conflicting claims on an unpatented mining grant, except in the case of rival contestants under the Federal statutes in the case of mining claims. I think it is equally well established that when one man sets up a claim of right to a mining claim or to any piece of public land and another man sets up a claim to the same land, the department has no jurisdiction to issue a writ to hold the property in status quo; accordingly the courts will take jurisdiction to protect the rights of each of the claimants against the assertion of the other.

Let me illustrate: Early in my practice I brought a suit in behalf of a homestead claimant as to certain lands against a desert-land claimant of the same land. The desert-land claimant was endeavoring to drive the homestead claimant off, and the homestead claimant was endeavoring to do the same thing to the desert-land claimant. Which of these two was entitled to the land was solely for the determination of the Land Department. The principle was maintained that the court would take jurisdiction to enjoin either of them from interfering with that portion of the property which was in the actual possession of the other. It would stop Jones from driving Smith off and stop Smith from driving Jones off until the case was determined in the Land Office. I presume, probably, it is that principle which the department is following in the Honolulu case. The right to determine whether the Honolulu Co. is entitled to the land or not is in the department; but while that is going on it seems to me that the United States has the right to go into the courts and enjoin the Honolulu Co. from taking oil out of the ground pending determination in the Land Department as to whether they own the land or not.

The ACTING CHAIRMAN. That is exactly the view taken by the chairman. I hold exactly the same view. The point I am making is this: Ultimately the Department of the Interior, having exclusive jurisdiction, must determine whether the Government owns this land or the Honolulu Oil Co. owns it; and while the position of the court in this ancillary proceeding or injunction may be persuasive, if it is to go to that extent, with the Department of the Interior, it is not binding upon the department on the question of merit.

Senator WALSH. We will assume that in this ancillary proceeding, for the purpose of preventing the appropriation of oil while the action is pending, the question is presented as to whether the group theory can be applied under the Pickett law—that is to say, whether the work done on one claim will avail for work done for the entire group of claims. That is the question of law involved in the application for the injunction or receivership. The trial court reaches the conclusion that the principle is applicable and that if the facts exist the protection can be extended over the entire group. An appeal is taken from the order appointing the receiver, and the circuit court of appeals reaches the conclusion that it is an erroneous view, and lays down the principle that the group theory is not applicable to that. I take it that what the Attorney General means is that in a case of that character he thinks that the Department of the Interior ought to recognize the persuasive, if not the binding, force of the decision of the circuit court of appeals at to that legal principle.

The ACTING CHAIRMAN. I agree with that exactly. It would be persuasive, but the Department of the Interior has held that the Honolulu Co. owns the land in No. 2.

The ATTORNEY GENERAL. It has not so held. They have rescinded that holding. I do not want to contradict you, Senator Pittman. They did so hold at one time, but the ruling there has been set aside. As it stands to-day, the department does not so hold.

The ACTING CHAIRMAN. The history, however, is as I have stated it. The Department of the Interior has held that the Honolulu Co. owned the land and the Government did not. The Navy Department requested that the decision be set aside by the Department of the Interior, and the Department of the Interior declined. There was a lot of correspondence on that subject, in the course of which the Department of the Interior stated that it did not desire to go into an investigation of the matter; that it had been investigated; that it felt it was fully advised as to it, and saw no reason to change its views. That is the record in the hearings on this matter. It was only finally, as the record will show, rescinded. That was after the clear listing of it, which was by reason of the insistence of the Department of Justice, supported by the President of the United States.

Senator WALSH. Is it not true that the jurisdiction of the Land Office continues until the patent actually issues?

The ACTING CHAIRMAN. Undoubtedly.

Senator WALSH. Consequently, until that time, the court has no jurisdiction to determine the question as to whether or not patent should be issued?

The ACTING CHAIRMAN. The court has no jurisdiction to determine whether it should be issued. It simply makes an order that patents shall issue. When a receiver's receipt is granted and the money is paid, to all intents and purposes the patent has been issued. The patent is only the formal confirmation of the act.

Senator WALSH. Not for purposes of jurisdiction.

The ACTING CHAIRMAN. Not for the purpose of jurisdiction. The jurisdiction arises when the application is made. The Land Office has still jurisdiction. The record in this case shows it had no intention of rescinding that; that it did not rescind that of its own will. I am raising this question to show the probability of the Government ever establishing title in the Honolulu case. The Government lost section 2. It has elsewhere to-day ground in naval reserve No. 2 that may be affected by this bill that it has no chance of getting at all—four or five thousand acres of land. That four or five thousand acres is affecting the flow of the oil. Yet, we are discussing this as a possible reserve for the Navy.

Here is what the judge decided in this case with regard to unit development, with regard to development in one place, and the development of one claim for the benefit of a group of claims. On page 27 of the opinion in Equite A-38, United States of America *v.* Thirty-two Oil Co., the court said [reading]:

> I have no doubt that work could have been in progress at the time of withdrawal on one of a group of locations or even extraterritorially to any of them which could properly be held to be work leading to discovery on all, such as the building of roads, laying of water lines, establishing camps, assembling material and equipment, and the like, if such work directly tended to and was purposely designed for the development of each location with all practical expedition.

Then he cites Anvil Hy. and Dr. Co. *v.* Code (181 Fed., 205); U. S. *v.* Ohio Oil (240 Fed., 996); Smelting Co. *v.* Kemp (140 U. S., 636); Jackson *v.* Roby (190 U. S., 440).

Now, then, there is a decision by the Federal court in California that is trying the same question, apparently, that you are trying in the Honolulu Oil case. There is the opinion of the district court with regard to that question, and yet, even with the opinion of the court as to the principle involved, it still comes down to the application of the facts in each particular case.

The Secretary of the Interior in this case has stated to the Department of Justice that he does not desire any more facts; that he has got all the facts there are in it. Now, what are the probabilities of the Government winning that land?

The ATTORNEY GENERAL. May I be permitted to speak? I must differ diametrically from the honorable chairman of this committee as to the result of the decision in the case from which he has been reading extracts. I will ask that after a while my assistant here, who is more familiar with these cases than I am, be permitted to go into it more fully with you. I think you all understand that the Attorney General can not possibly keep all these things in mind. It is impossible to do that under the circumstances. However, I have given the facts consideration, and I have gone over this decision. If the chairman will permit me to reply, my contention will be that the conclusion reached in this case is just exactly the reverse of the contention made by the chairman. There is this distinction, however: In equity—and all these courts are courts of equity—the facts in one particular case, of course, may edge out over the line of the principle which would apply to another case. The general principle, of course, is there, but so far as the actual facts in one case are concerned, I can conceive of cases involving the group theory, or seriatam development theory, in which the court would protect the party involved under certain conditions. But my insistence is that a principle of law applied to the facts as they have existed in the Honolulu case would have application to all cases involving substantially the same facts. I believe, if you will permit me a little later on to reply from the record in that case, you will be convinced, after careful investigation, that the decision in that case is not in accordance with your contention, but is to the contrary.

Now, I confess for the moment that I do not see why the Honolulu decision has such a bearing on the question of maintaining the naval reserve. I shall, however, pass on to a brief résumé of the litigation.

Senator HUSTING. Before you get through, Mr. Attorney General, are you going to tell us anything about the Southern Pacific lands—the litigation with regard to the Southern Pacific lands?

The ATTORNEY GENERAL. That really is not involved in the withdrawal order at all. A large part lies in the naval reserve and also part out of the reserve. Those are suits brought to cancel patents alleged to have been secured by fraud. I will state at this time that we feel extremely hopeful of getting substantial results from those suits.

Senator HUSTING. That is one of the matters discussed here, and the contention was that if the Government lost the suits in the Southern Pacific case and in the Honolulu Co. case, the remaining lands would be of such little consequence that it would not pay to hold them as a naval reserve, because of the number of wells dug; so, in that sense, this whole matter has something to do with the consideration of the advisability of a policy of abandonment of naval reserve No. 2.

The ATTORNEY GENERAL. Our view, based upon the reports of many experts, is that if the Government loses the Southern Pacific cases, there would still be a substantial protected area there for naval reserve. I am hopeful of gaining that land, which, in itself, is tremendously valuable.

Senator PHELAN. Where is that case now?

The ATTORNEY GENERAL. That has different phases. We have been taking testimony. Judge Bledsoe has been East this spring taking testimony in New York and here. The testimony has been completed, I am informed, but the case has not been finally argued.

Senator PHELAN. It has not been argued?

The ATTORNEY GENERAL. No.

Senator PHELAN. There has been no decision in the case at all?

The ATTORNEY GENERAL. No.

Senator SHAFROTH. Is it your contention, Senator Husting, that the Southern Pacific lands are involved in this amendment offered by Senator Phelan?

Senator HUSTING. No, sir. I have only said that it might be well to understand the status of this Southern Pacific case, because the contention has been made here that with the Southern Pacific case lost to the Government and with the Honolulu lands lost to the Government there would not be enough left to be worth while, because the operating wells in this territory are draining substantially what would be left of naval reserve No. 2; that is, of course, if the Government should lose the Southern Pacific case and the other case.

Senator SHAFROTH. There would be no way of determining this matter until after the Southern Pacific case had been decided.

Senator HUSTING. It would be prudent to maintain that until such time.

Senator WALSH. A number of the witnesses have assumed that the Government would win the Southern Pacific suit, and assuming that to be the case, they insisted that the naval reserve can not be held; that the wells upon the other tracts, as well as the wells upon the Southern Pacific sections, would allow the gas to escape, so that 10 years from now it would be practically impossible to take oil from the wells. Both assumptions have been used. Senator Husting is right as to the assumption that should the Government lose the Southern Pacific case there would be nothing left that it would pay to preserve. It is likewise argued, assuming that the Government wins the Southern Pacific case, that the number of wells is so great that they would drain this region.

The ATTORNEY GENERAL. If the Government wins the Southern Pacific case, and the land so won falls within the withdrawal order; of course, in that sense they would be within that area affected by that act.

Senator SHAFROTH. They would be affected by the wells on land now being operated.

The ATTORNEY GENERAL. Yes.

The ACTING CHAIRMAN. Do you hold the same opinion now with regard to this litigation that you held on February 16, 1916, when you gave this testimony before the committee? It is on page 344 of the hearings on House bill No. 406 before this committee:

> In response to these assertions I have this to say: First, these suits were instituted (all of them, I believe) with the approval of the Interior Department, whose liberal view of the Pickett Act is reflected in its decision of the Honolulu Consolidated Oil Co.'s case.
>
> Second, the Honolulu case, I understand, is regarded by the Interior Department and by the attorneys of my department as a case supported by a state of facts far more favorable to the claimants than exist in any of the cases in suit.

The **Attorney General.** I can not say about that now. In fact, I can not keep the various cases in my mind. Of course, what I said at that time was what I thought at that time; but I could not at this time compare the merits of the Honolulu case with some 74 other cases. The general principle is all that I can state with regard to it.

The **Acting Chairman.** I assumed that you were advised.

The **Attorney General.** It doubtless expresses the view I had at that time. In fact, I do not see anything contradictory to what I have stated here. I do not doubt that that was reported accurately.

Now, if you will permit me to proceed, I can finish in a short time.

In three suits the district court has decided that where applications for patent are pending and final certificates have been issued by the Interior Department, the court has no jurisdiction to determine the claims on the merits, as that must be done in the Land Department. In those three cases, therefore, the court declined to entertain jurisdiction.

The Government has lost two cases, as I think I have heretofore stated, one in Wyoming and one in California, the court holding that the facts did not sustain the Government's contention.

Senator **Walsh.** How did the court come to take jurisdiction in those cases?

The **Attorney General.** Those were cases where there were no applications for patent pending in the Land Office, I am informed.

Senator **Sterling.** What was the nature of those suits? The suits were brought for what?

The **Attorney General.** For the land.

Senator **Sterling.** They were suits brought by the Government of course. Just what was the nature of them?

The **Attorney General.** Suits brought for the land on the contention that the withdrawal order of President Taft entitled——

Senator **Walsh.** In the nature of an ejectment or action to quiet title?

The **Attorney General.** Yes; to quiet title and for accounting. They were all equity suits.

In one of the Wyoming cases, that against the Midwest Oil Co., where the Supreme Court of the United States upheld the validity of President Taft's withdrawal order, final decree was entered in favor of the United States requiring the defendants to pay $9,350 damages and costs, amounting to $445.96.

In 11 of the cases in California decisions on the merits have been rendered in favor of the United States, and 7 of these cases have been referred to a master for an accounting. All of these cases were brought to equity courts.

Senator **Phelan.** Outside of naval reserve No. 2?

The **Attorney General.** Some of those were in naval reserve No. 2.

Senator **Phelan.** It was stated the other day that the Government had not won any suits in naval reserve No. 2.

The **Attorney General.** As to these 11? I would have to have that verified.

Senator **Husting.** That statement has been made repeatedly, that none of these suits won by the Government was in the naval reserve. In that connection, before you get through, I would like to have you state whether any of these decisions, even if they did affect lands outside of the naval reserves, were based upon facts which obtain on lands in the reserves; in other words, whether they were based upon a state of facts which will obtain in suits affecting lands within the naval reserve?

The Attorney General. I know of no principle of law which makes the law within the reserve any different from that outside of the reserve and within the withdrawn area.

Senator Husting. But are there not some of these McMurty claims involved here? In other words, where particular lands surrounded or where outside of the naval reserve and did not really affect the lands within the naval reserve, the same states of fact obtain?

The Attorney General. You mean that the same principle of law was involved?

Senator Husting. Yes.

The Attorney General. I do not know of any reason why the same principle should not apply within and without the reserve.

Senator Walsh. The question, I think, is a very simple one. Has any suit been won in naval reserve No. 2?

The Attorney General. No. A receiver has been appointed in 24 of the cases, where there were 85 defendants, 63 of whom objected to the appointment and 22 consented. A receiver has been appointed in 24 out of 26 cases. In one case the Government's application for a receiver was denied. In the other case the parties gave bond, which made it unnecessary to press for a receivership. In two cases applications are pending for appointment of receiver. The applications for receivers in the remaining cases will be made as soon as a judge can be secured to hear them.

I have here a detailed statement showing as fully as practicable the status of all this litigation. I am giving you gentlemen information concerning every one of those 74 suits—the date filed, the character of the suit, the pleadings had in that suit up to this time, so that if you see fit you can make it a part of the record.

Just for a moment returning to this particular question, one decision in California has been against the Government on the merits of the case; three decisions in Wyoming have been against the Government on the merits of the case; and three decisions in California have been against the Government because, as I have heretofore stated, the court held that the facts developed that there was no jurisdiction.

Senator Husting. I ask to have that statement made a part of the record.

The Acting Chairman. Without objection, that will be the order.

The Attorney General. I wish to refer for a moment to the El Dora case, because I think it has some bearing on the problem you are considering. I am here to furnish you such information as I can, and you can put this to such use as you see fit and proper.

In the El Dora case the master found that the usual royalty obtaining in that locality before wells were brought in was one-eighth, and after wells were brought in, provided they were ordinary wells and not gushers, the royalty was one-sixth, and that where gushers were discovered and brought in the royalty was one-fourth. By that I understand him to mean where it was purely a prospecting proposition it was one-eighth, but where the land was so situated as to indicate it was in nongusher territory it was one-sixth, and where the surrounding property indicated that it was gusher territory one-fourth. That was in that particular case.

Senator PHELAN. What was that?

The ATTORNEY GENERAL. The El Dora case.

Senator SHAFROTH. In naval reserve No. 2?

The ATTORNEY GENERAL. No.

Senator PHELAN. Who determined the percentages?

Senator WALSH. The master.

Senator PHELAN. Are those leases recommended to be made to people who have prior claims of some sort or outsiders?

Mr. KEARFUL. The master, in his report, gives a statement of the average royalties in that locality.

Senator PHELAN. That is as between owners and lessees?

The ATTORNEY GENERAL. We are stating it as between private individuals.

The receiver appointed by the court to protect the several properties involved in the litigation has now in his hands approximately $6,300,000 in money and oil approximating $1,300,000 in value.

Now, to refer to the 24 cases in which receivers have been appointed.

I will hand you this detailed statement in regard to this litigation.

Senator SHAFROTH. I move that that be made a part of the record.

The CHAIRMAN. Without objection, that will be the order.

The ATTORNEY GENERAL. On June 7, 1917, decisions were announced in eight cases by Judge Bean. In three cases (A-41, A-42, and A-43), it was held that the court had no jurisdiction to determine the merits involving the question of diligence while an application for patent was pending in the General Land Office. The suit was for an injunction and accounting.

In A-48 it was held that the defedants were diligent, and they were doing all they could reasonably be expected to do under the circumstances.

In A-38, United States against Thirty-two Oil Co.'s it was held that what are known as the McMnrty locations were fraudulent and conferred no rights. That will be found at page 27 of the opinion.

It was also held that work on one group of claims while work on the others is suspended is not work on all.

Senator WALSH. Do you recal, Mr. Attorney General, what the facts constituting those frauds were?

The ATTORNEY GENERAL. Those are what are sometimes known as the stockyard cases, where there were charges that a man had secured other parties to apply for a location, when the fellow applying did not know what it was for. He thought he was applying for appointment as postmaster, for instance.

Senator HUSTING. He thought it was a petition for some office?

Senator WALSH. It was really a request to be authorized to locate a claim?

The ATTORNEY GENERAL. Yes. This man took up a large number of claims.

Senator WALSH. It was a dummy entry?

The ATTORNEY GENERAL. Yes.

Senator HUSTING. Let me ask you right there, going back to the question asked a while ago, whether some of these sections upon which McMurty located these men that he was using as dummies were within the naval reserve No. 2?

The Attorney General. Yes; they were.

Senator Husting. Then this decision in a way affects the lands in the naval reserve the same as it did those lands outside of the naval reserve?

The Attorney General. Those McMurty locations were made partly within and partly outside of the naval reserve.

I believe I have said that it was held that work on one of a group of claims while work on the others is suspended, is not considered work on all.

Senator Walsh. I do not understand the last. We were answered a while ago that none of the suits won included land within the naval reserve No. 2, and now I gather from the answer to the interrogatory of the Senator from Wisconsin that that is not true. Let us get that right.

The Attorney General. No; I do not so understand. As a matter of fact, some of these McMurty claims were within the naval reserve No. 2, and the McMurty claims outside the reserve were won on the ground that the entries were fraudulent.

Senator Husting. Let me state clearly what I am getting at.

The Attorney General. There is not the slightest contradiction in my own statement. The McMurty claims are quite a bunch of claims—about 32. They are known generally as McMurty claims. Some are within naval reserve No. 2 and some are outside of naval reserve No. 2. The general phase of the question is the same in reference to the claims or cases outside of the reserve as with respect to those lying within the reserve. Many of the McMurty claims do lie within naval reserve No. 2, and cover about five sections.

Work on one of a group of claims is not work which entitles a group to the protection of the proviso of the Pickett Act.

Now, in reference to these matters, I ask that my assistant, who is more familiar with them than I can possibly be under the circumstances, be permitted to answer such questions as you may desire to ask.

In three cases (A-34, A-35, and A-36) it was held that what is known as the Burge locations were fraudulent.

I am giving you this from decisions rendered by Judge Bean on or about June 7, 1917. Four of the cases were decided in favor of the Government—one of the McMurty cases and three known as the Burge locations.

The Acting Chairman. All those cases involved fraud, did they not?

The Attorney General. Yes, sir; fraud, or dummy entries, which is the same thing.

The Acting Chairman. In other words, the Federal court has decided in favor of the Government where there is fraud and against the Government where the question was solely one of the construction of the Pickett Act?

The Attorney General. No; I am speaking of eight particular cases decided on that occasion. I hope I have at least made myself clear on that point. As to the four in which the question of fraud was involved, they were decided in favor of the Government.

Senator HUSTING. Have you got the citations for all those cases or have you given them in that memorandum.

The ATTORNEY GENERAL. I have listed every case.

Senator HUSTING. With the citations?

The ATTORNEY GENERAL. It gives the style of the case and the number.

Now, gentlemen, that, in a general way, is all I know about it. Permit me to say that what I do know I have learned while attempting to protect the rights of the Government, as written on the statute books. I have frequently been criticized for my actions, but I have gotten so that I do not mind that. I shall continue to protect the rights of the Government in accordance with the laws written in the statute books until they are changed. I do not know of anything else that I can tell you.

Senator HUSTING. I should like to ask you a few questions. Have you examined this proposed amendment carefully?

The ATTORNEY GENERAL. I glanced over it.

Senator HUSTING. Now, what would be the effect of this amendment, should it be adopted, as to this amount of money in the hands of the receivers? It was over $6,000,000, I think you stated.

The ATTORNEY GENERAL. I should say we would turn most of it over to these people, and that we would dismiss our proceedings.

Senator WALSH. I think we should have a careful canvass of the proposed amendment while the Attorney General is here.

The ATTORNEY GENERAL. I am very much obliged to you, Senator Walsh, for making that suggestion. I am here to give you whatever information I can.

Senator WALSH. Let us take up the amendment with the Attorney General sentence by sentence, and let us have his views as the lawyer of the Government concerning the wisdom of this proposal.

The ATTORNEY GENERAL. Senator Walsh, as to that, speaking with absolute candor in regard to it, I do not know what the policy of the Government is.

Senator WALSH. I understand, Mr. Attorney General; but I want from you your judgment as to how an amendment such as this, if it were adopted, would affect the interests of the Government.

The ATTORNEY GENERAL. I will do the best I can to help you. I will take a copy of the amendment. I am not an oil man, however, and my opinion as to its practical effect on conditions would not be worth much.

Senator WALSH. Give us the benefit of your judgment as a lawyer. I will begin with section 16:

> That upon relinquishment to the United States within 90 days from the date of this act, or within 90 days after final denial or withdrawal of application for patent, of any claim or subdivision thereof asserted under the mining laws prior to July 3, 1910—

That is the date of the second withdrawal act—

> to any unpatented oil or gas lands, included in any order of withdrawal—

Accordingly, this would affect and reach everyone who had made a claim up to the time of the second withdrawal.

The ATTORNEY GENERAL. Or was claiming under some one who had.

Senator Walsh. Yes; or was claiming under some one who had—

> to any unpatented oil or gas lands included in any order of withdrawal or within naval petroleum reserve No. 2, the claimant or his successor in interest shall be entitled to a lease—

That is to say, if he applies for a patent and withdraws, he may have a lease; or, if he has applied for a patent and it has been denied, he may have a lease. Have I stated it correctly?

The Attorney General. I think so.

Senator Walsh (reading):

> For each asserted mineral location of 160 acres or less or any subdivision thereof upon which such claim is based and upon which said claimant, his predecessors in interest, or those claiming through or under him, have, prior to the date of this act, drilled one or more producing oil or gas wells.

That is to say, the claim must have been initiated prior to the second withdrawal, and since that time a well must have been produced, or a well must have been drilled.

Senator Husting. By himself or by another claimant. The claimant, however, may be one who has a claim under a transfer subsequent to 1910 and prior to the date of the act.

Senator Walsh. It embraces every claimant, even if it is yesterday or the day before or the day after [reading]:

> Such lease to be upon a royalty of one-eighth of the production of oil or gas produced and saved therefrom after first deducting from the gross production such oil or gas as may be used in the development or operating such lands, and otherwise on the same terms and conditions as other oil and gas leases granted under the provisions of this act.

That is to say, it gives a preference right to lease at one-eighth to all these people who had asserted title prior to the second withdrawal and who have since produced a well.

The Attorney General. Yes; that is one-eighth of the net.

Senator Husting. That applies to all land within or without the naval reserve?

The Attorney General. Yes.

Senator Walsh (reading):

> *Provided, however*, That no claimant who has been guilty of fraud in the location of any oil claim or gas-bearing land shall be entitled to any of the benefits of this section, nor shall any person who acquired such land with actual knowledge of such fraud be entitled thereto.

That would cut out the man who was guilty of fraud and the man who acquired the land with actual knowledge of the fraud.

The Attorney General. It eliminates constructive knowledge and makes it actual.

Senator Walsh. But it would give it to a man, who, without actual knowledge of the facts, purchased from one who was guilty of fraud in the location.

The Attorney General. Yes.

Senator Husting. This would in effect, Mr. Attorney General, put the burden of proof upon the Government, and as a practical proposition would validate the claim of most anyone who held under a fraudulent or a dummy entry, would it not?

The Attorney General. It would put the Government at a disadvantage in several respects. In the first place, it would eliminate constructive notice of fraud; in the second place, it would put the burden upon the Government of showing that the man was not an actual purchaser. It would make the handling of it very difficult in many cases. I can not say how many, of course.

Senator HUSTING. The practical effect would be that where dummy entry locations have been made—and as a matter of fact, they have been made in a great many instances——

The ATTORNEY GENERAL. Take the McMurty cases, for instance.

Senator HUSTING. Anyone taking a chance would be protected. Does it not validate almost everybody holding under a dummy entry?

The ATTORNEY GENERAL. I should say it would seriously hamper the Government.

Senator WALSH. You have prevailed in the McMurty cases?

The ATTORNEY GENERAL. So far as we have tried them.

Senator WALSH. Yes. That is what I mean.

The ATTORNEY GENERAL. Yes.

Senator WALSH. You were obliged to prove fraud in those cases?

The ATTORNEY GENERAL. We established it to the satisfaction of the court.

Senator WALSH. Let me inquire if those were cases in which the original fraudulent locator was a party?

The ATTORNEY GENERAL. I think not.

Senator WALSH. Or had he conveyed?

The ATTORNEY GENERAL. They had conveyed.

Senator WALSH. They had conveyed?

The ATTORNEY GENERAL. Yes.

Senator WALSH. So that all the Government was required to prove was the original fraud, and the original entry being fraudulent, it was void in the hands of any subsequent transferee.

The ATTORNEY GENERAL. I assume that is right. I can not speak positively at this time.

Senator WALSH. I think that you are not obliged in these cases to assume the burden that this would put upon you to prove not only that the original entry was fraudulent, but that the transferee acquired it with knowledge of fraud. All you were obliged to prove in those cases was that the original entry was fraudulent, and the interest of the transferee being only an equitable title, the entry was void in the hands of the transferee by reason of the original fraud.

The ATTORNEY GENERAL. I think so.

Senator WALSH. So that this would put a greater burden upon you than in the McMurty case?

The ATTORNEY GENERAL. You state the facts correctly; yes.

Senator PHELAN. Does this in any way affect the Southern Pacific case? I merely ask for information, because it is not intended to affect that case in any way.

The ATTORNEY GENERAL. If we should recover from the Southern Pacific, those lands would fall within the withdrawn area—a part of them. I am assuming that as to those lands nobody is asserting any claims except the Southern Pacific. I do not know, at this time, that anybody is claiming, except the Southern Pacific.

Senator PHELAN. There would be no possibility of the Southern Pacific, before the enactment of this legislation, transferring to parties, in good faith, because the facts are so notorious. It would be impossible by the enactment of such an amendment as this to enable them to transfer their property to others, and enjoy the benefits of the act.

The **Attorney General**. I have always assumed, of course, that there was no intention to give them any relief. I have not critically examined it with that view, but, of course, I am sure there is no such intention.

Senator **Walsh** (reading):

> That upon the issuance of said lease and prior to the delivery thereof the applicant thereof shall pay to the United States for one-eighth of the oil or gas produced and saved from the lands included in said claim, subsequent to February 23, 1915—

The **Attorney General**. That is the date of the Mid-West Oil Co. decision?

Senator **Walsh** (continuing):

> At the current field price at the time of production, which shall be in full satisfaction for all oil or gas extracted from said land prior to said lease.

That would allow the claimant to take everything that he had produced from the land prior to that decision.

The **Attorney General**. Yes.

Senator **Walsh**. But would require him to pay for everything produced since that decision.

The **Attorney General**. That is, one-eighth of what he produced.

Senator **Phelan**. The great bulk of the production under receivership has been since that date.

Senator **Husting**. That may be, but they are still liable in the courts, if the Government prevails, to pay all of that amount. What would you say, roughly, Mr. Attorney General, would be the amount of money which would be involved. In other words, how much in money damages would the Government forego if this act was passed?

The **Attorney General**. It would be a very, very large sum of money.

Senator **Husting**. Assuming that the Government would be successful in all the cases.

The **Attorney General**. Well, you must keep in mind that that is a period from August, 1910, until February, 1915—approximately four and a half years. I should say, from my general information on the subject, it would be a very large sum of money.

Senator **Shafroth**. Wouldn't you allow the men who have produced this oil the expense of producing it?

Senator **Walsh**. The point is that they pay no royalty whatever if the lease is awarded to any one of these men. He pays no royalty whatever down to the date fixed here.

Senator **Shafroth**. On the basis that the lower court decided that he was acting within the decision——

Senator **Walsh** (interposing). If you will pardon me, we are just stating the fact that he gets it down to February 23, 1915, without paying any royalty whatever. His royalty commences from that date.

Senator **Shafroth**. That is, provided he operated under the decisions of the courts of the United States. He was entitled to get this until the Supreme Court of the United States decided otherwise.

Senator HUSTING. I would not feel like making a gift to a man who was taking oil out of Government property.

Senator SHAFROTH. Even if he was operating under a decision of a court of the United States?

Senator HUSTING. If he was operating under false advice, or was operating, in fact, on land belonging to the Government, I can not see any reason for making him a present of oils which he took from the Government.

Senator PHELAN. You are not considering the equitable rights of the man who entered under the law and who spent his money in good faith?

Senator HUSTING. The courts will take care of those equities.

In answer to that question which I asked a while ago, Mr. Attorney General, can you give me an estimate?

The ATTORNEY GENERAL. Something over $6,000,000 is in the hands of the receivers at this time. My information is that a large part of that would represent the value of oil taken out prior to the date fixed in this bill—quite a large part of that. How much there is, I have not the figures to give you. It would be a substantially large sum.

Senator HUSTING. This $6,000,000 represents oil taken out before the receivers were appointed.

The ATTORNEY GENERAL. Quite a large part.

Senator HUSTING. It will run up to probably $20,000,000?

The ATTORNEY GENERAL. It would be quite a large sum.

Senator WALSH. The total amount is six million?

Senator HUSTING. They have only got that where they have receiverships. The Attorney General is bringing in receiverships as fast as he can.

You do not mean, Mr. Attorney General, to assert that you have receiverships in all cases where you are entitled to a receiver?

The ATTORNEY GENERAL. Oh, by no means. We have gotten them as fast as we can get them. In all cases that we have asked them we have gotten them.

The ACTING CHAIRMAN. You have a receivership on section 2 in the naval reserve No. 2.

The ATTORNEY GENERAL. I do not know what the name of that case is.

The ACTING CHAIRMAN. It was the case mentioned a while ago. It is the North American case.

The ATTORNEY GENERAL. I think so.

The ACTING CHAIRMAN. The decision was not determinative of the case?

The ATTORNEY GENERAL. Not final; no.

The ACTING CHAIRMAN. That carries out my ascertion made a while ago that it requires less evidence to appoint a receiver than to decide on the merits of the case.

The ATTORNEY GENERAL. That may be so; that is your opinion.

The ACTING CHAIRMAN. Undoubtedly they appoint a receiver. The Government made a prima facie case out for the appointment of a receiver. However, when a decision was reached on the merits they decided against the Government and discharged the receivership.

The ATTORNEY GENERAL. That sometimes happens.

The ACTING CHAIRMAN. So that the appointment of a receiver is not conclusive?

The ATTORNEY GENERAL. No.

Senator HUSTING. I want to ask you how many cases you propose to bring.

The ATTORNEY GENERAL. Just a moment, Senator Husting. I say, in answer to your question, Mr. Chairman, it is not conclusive. I mean it is not conclusive except in so far as it establishes a proposition of law. The legal decision might or might not be applicable to the facts in another case. I would regard it as conclusive as a proposition of law.

Senator HUSTING. Can you give us any idea of how many more cases you propose to start of a nature and magnitude about the same as those you have already started?

The ATTORNEY GENERAL. I can not tell you, sir, because, as a matter of fact, our ability to bring suit depends very largely on the Commissioner of the Land Office.

Senator HUSTING. In what way?

The ATTORNEY GENERAL. Under the act of 1914, he was given power to lease. I want to say right in this connection that my theory in regard to these leases was expressed by your chairman in some remarks in committee recently, with regard to the act of 1914, to the effect that by that leasing system it was intended to provide a cheaper way of taking the place of receiverships; and the general idea of that provision of the act of 1914 is that pending disposition of applications for patents the Commissioner of the Land Office or the Secretary of the Interior may issue these leases. That he has done very extensively. I understand he has issued a circular inviting them all to come in.

The ACTING CHAIRMAN. Not inside of the naval reserve?

The ATTORNEY GENERAL. Outside.

The ACTING CHAIRMAN. They are persuing the practice of operating wells inside of the reserve by receivership and declining to let them be operated under the act of 1914 by contract.

The ATTORNEY GENERAL. I know he made no leases inside the reserve. I understand the Secretary of the Navy seriously objected to it. As far as my department is concerned, when he issues leases and fails to pass on application for patents, my hands are tied. There is nothing I can do in any way. It depends upon the Commissioner of the Land Office how many suits I can bring.

The ACTING CHAIRMAN. The testimony in the hearing before the committee shows that the Land Department intended to execute these contracts inside of the reserve as well as outside of the reserve and on the withdrawn area on the same terms and conditions, but that the Secretary of the Navy requested him not to do that. It is by reason of that request that he failed to execute the act of 1914, which, as I have stated, was intended to take the place of the receiverships. Instead of following the act and allowing a claimant to work a well that he had sunk, they have taken the wells away from him and put them into the hands of a receiver.

The ATTORNEY GENERAL. I can not agree with you that the act to which you refer is mandatory and requires him to issue leases. It merely gives him the power. When the Secretary of the Navy protested he merely did not use the power which he had.

Senator HUSTING. Has the Commissioner of the Land Office construed this statute as authorizing him to make contracts and leases with men who have been guilty of fraud?

The ATTORNEY GENERAL. He invites them all to come in and take a lease.

Senator HUSTING. Whether an entry has been fraudulent or not?

The ATTORNEY GENERAL. That is my understanding. It is a written circular. You can get a copy of that.

The ACTING CHAIRMAN. It takes the place of receiverships?

The ATTORNEY GENERAL. Yes.

Senator WALSH. The oil is already stored under the act of 1914.

The ACTING CHAIRMAN. They can make any contract that the Secretary of the Interior sees fit, with the occupant of the land, looking to the preservation of the oil, pending determination of the suit.

Senator HUSTING. Do you construe that act as authorizing the Department of the Interior to make contracts with men guilty of fraud?

Senator PHELAN. You mean men accused?

Senator HUSTING. No; I mean guilty.

The ATTORNEY GENERAL. The purpose of the act of 1914 is to conserve the oil and to provide machinery which would be, perhaps, cheaper than a receivership and less ponderous, as well as more flexible, by which the Secretary of the Interior could make contracts for conservation during a considerable period of time; that is, during the period that he was considering whether he would give these people a patent or not.

I do not care to express my views with regard to other branches of the Government. I really would rather not go into that.

Senator HUSTING. Let me ask you whether the law and the title of the law does not appear to contemplate the issuance by the Government of leases only to those who have a prima facie right to the land or who have gone on in good faith?

The ATTORNEY GENERAL. In my judgment, no man who has been guilty of fraud has any rights that should be respected anywhere in any court.

Senator PHELAN. As a matter of fact, has any lease been granted to any man who has been accused of fraudulent entry?

The ATTORNEY GENERAL. In a large number of the cases the Government's expert agents have reported there were fraudulent entries, and the commissioner has held prima facie they were fraudulent.

The ACTING CHAIRMAN. I prepared this bill and presented it to this committee and also to the Public Lands Committee of the House. The bill originated through the bringing of these suits or the bringing of suits charging fraud and dummy entries and exclusions by virtue of the withdrawal act. It became necessary to protect the oil pending litigation, no matter what the grounds of the litigation. The idea was to protect the oil at the time litigation was pending, no matter what the grounds of contest might be. The wells were then flowing. Some one had to operate them. The object was to avoid expensive receiverships. That was the object, and it was so stated to this committee and the Committee on the Public Lands of the House of Representatives.

The ATTORNEY GENERAL. You intended to cover all cases, whether fraudulent or not?

The **Acting Chairman.** I intended it for the purposes which I have just stated.

The **Attorney General.** I do not see how a man is entitled to any protection whatever who is guilty of fraud.

The **Acting Chairman.** Until the department determined the title you could not tell whether a man was guilty of fraud or not; you might suspect him, but until there was a determination of the question he would have certainly the right to preserve the oil in the meantime, either by receiver or by himself.

The **Attorney General.** Yes.

Senator **Husting.** Is not the effect of the act of 1914, as construed by the chairman, this—that no matter how a man got hold of the land, whether he is guilty of absolute fraud or a violation of the statute——

Senator **Walsh.** It takes care of the situation pending determination, whether he is or not.

Senator **Husting.** I am asking if the effect is not this: When the lease is issued to this fraudulent entryman, locator, or his successor, and he has a right to take the oil from the land, it gives him a chance to give to the Government, in the event that it finally proves fraud against the locator or occupant of the land, only one-eighth, and gives the fraudulent entryman seven-eighths of the fruit of his fraud.

The **Attorney General.** The lease contract so states upon its face. It states that seven-eighths of the output of the oil is vested in the party asking for the patent, and that one-eighth will remain there for the Government if his claim is turned down.

The **Chairman.** You mean under the act of 1914?

The **Attorney General.** I am talking about the lease of the Department of the Interior.

The **Acting Chairman.** Under the act of 1914 it allows the Interior Department to make any price it sees fit.

The **Attorney General.** We have our wires crossed. I mean the effect of the lease.

The **Acting Chairman.** You mean what the department did?

The **Attorney General.** Yes.

The **Acting Chairman.** That is a matter of discretion.

The **Attorney General.** It vests in them seven-eighths of the property.

Senator **Husting.** You say that the Commissioner of the Land Office, with the approval of the Secretary of the Interior, is issuing leases of that sort in certain cases?

The **Attorney General.** I am not prepared to speak about that. I am speaking of the leases that have been called to our attention.

Senator **Husting.** Let me ask you this: In cases where the inspectors have reported fraudulent entries on land, nevertheless the Commissioner of the Land Office has entered into leases with these people, giving these men who are reported to be in fraudulent occupancy of the land the right to take oil from the land and keep seven-eighths of the oil so taken; and in the event the Government proves the fraud with which they are charged the Government receives but one-eighth of the oil taken from such land by the fraudulent entryman or occupant of the land?

The **Attorney General.** Suppose you ask the Secretary of the Interior about that. I have been going along and frankly answering a number of questions which I really preferred not to answer. He will produce the letters and the circular sent out, and he can answer the questions specifically.

Senator KENDRICK. Have you finished?

Senator WALSH. I have not finished consideration of the bill.

Senator HUSTING. I, for one, am going to find out about this. I want to protest against that sort of interpretation of the law and against such action on the part of the Commissioner of the Land Office and the Secretary of the Interior, if he is a party, or if it is done with his approval. It is contrary to good, sound public policy.

Senator WALSH. Mr. Attorney General, I would like to take up the amendment, beginning with line 18 [reading]:

> *Provided further*, That all royalties received under the provisions of this section from said naval petroleum reserve No. 2, whether in oil or money, shall be delivered or credited to the United States Navy.

I assume there is no objection to that. [Continuing:]

> *And provided further*, That none of the provisions of this section or of this act shall be applicable to or affect lands or minerals included within the limits of naval petroleum reserve No. 1, in the State of California, or naval petroleum reserve No. 3, in the State of Wyoming.

I think there will be no trouble about that. [Continuing:]

> That when a patent or lease has been or may be hereafter applied for under the provisions of this section, proceedings in all court actions commenced or which may thereafter be commenced by the United States affecting the lands or the product thereof for which patent or lease is applied for, shall be stayed until the Secretary of the Interior shall have finally passed upon said application, and in the event that he shall determine that the applicant is entitled to patent or lease, then, and upon the issuance of the same, such action shall be dismissed.

Have you anything to say with respect to that proviso?

The ATTORNEY GENERAL. I would dislike to turn over some millions of dollars that I think it would cover if this went through.

Senator WALSH. I understand about that.

The ATTORNEY GENERAL. It is suggested that proceedings have been brought to protect property pending this litigation. It is my understanding that there has been considerable difficulty experienced in connection with the unskillful sinking of wells, and so forth. There has been trouble through water getting into the different strata. That has cut a good deal of a figure in times gone by. If these proceedings are stayed, that protecting power would be gone. It is frequently the case, as I have been informed, that a field can be badly injured in that way.

Senator WALSH. The application might be pending quite a long while. Your stay would be effective as soon as the application is filed. You would not be in shape to protect the property while application for lease was pending.

The ATTORNEY GENERAL. Mainly, then, and to a certain extent thereafter.

The ACTING CHAIRMAN. Do you understand that the word "stayed" would mean the discharge of the receiver?

Senator WALSH. I was considering the case of an application pending for a receiver. We will say that an application is pending for a receiver. Hearing has been had and the court has it under advisement. There has been an application for lease, and the department is so crowded with work that it is unable to get around to act upon the lease for a period of six months or a year. The stay would take effect immediately upon the filing of the application for the lease, and no receiver could be appointed.

The **ACTING CHAIRMAN**. Yes; I see your point.

Senator **HUSTING**. Would not the effect also be that as soon as the patent or lease was issued, all your proceedings thus far initiated would fall? I mean, as soon as the lease or patent was issued, your action would be dismissed pertaining to that particular case; also the damages would be forfeited or remitted.

The **ATTORNEY GENERAL**. I assume that would be the legal effect of it.

Senator **HUSTING**. If it is in the hands of the receivers, it would be remitted.

Senator **WALSH**. That is another clause concerning which I intended to interrogate the Attorney General.

Senator **SHAFROTH**. You do not contend, Senator Husting, that if a person makes a filing under the placer-mining act, when there has been a decision of the United States courts in favor of the fact that he has a right to do that, and he goes on and sinks a well and gets oil, that he should have nothing?

Senator **HUSTING**. I have not said that; but I will say that when the Government of the United States sets aside certhin lands, such as the naval oil reserves, or withdraws from entry for any purpose certain lands, and a man fraudulently, and without any right to go upon that land, does go upon it, he does it at his own peril. In going upon that land at his own peril he keeps out other men who are law-abiding citizens and who have respected the order of the President and considered the character of the land; and in that instance I do say and protest that where they have taken that oil, which does not belong to them but to the United States, the United States, if it should eventually give a patent, should not give these persons millions upon millions of dollars for land and oil to which they were not entitled.

Senator **SHAFROTH**. But when the law is contested and the court finds in favor of the party it would be an outrage to treat the party interested in that way—I mean if he is required to give up everything and lose the product of his discovery.

Senator **HUSTING**. That is taken care of.

Senator **SHAFROTH**. This bill provides except in cases of fraud.

Senator **PHELAN**. It provides he must go on prior to the first withdrawal.

Senator **HUSTING**. The amendment provides that any claimant who holds under a claimant whose claim was initiated prior to this time.

Senator **PHELAN**. Of course, he succeeds to the rights of the grantor.

Senator **HUSTING**. He has no rights.

Senator **SHAFROTH**. If the Federal court held that he did?

Senator **HUSTING**. It does not cover such cases.

Senator **SHAFROTH**. It says, "provided that no claimant who has been guilty of fraud in the location of any oil claim or gas-bearing lands shall be entitled to any of the benefits of this section."

Senator **HUSTING**. You have given these rights to those who are innocent purchasers, so called, or innocent holders under fraudulent dummy entries.

Senator SHAFROTH. It says, further:

> Nor shall any person who acquires such land with actual knowledge of such fraud be entitled thereto.

Senator HUSTING. Yes; we went over that a little while ago.

Senator SHAFROTH. A man may have a note that may be a fraudulent note. It gets into the hands of an innocent person who has paid full value for it. Would the Government say he should not be protected?

Senator HUSTING. I understand it is a notorious fact that there is scarcely a piece of land in these oil regions where a land claim has not been initiated; that it is a flagrant practice for men to go and cover, as McMurty did, thousands of acres with dummy entries and then turn it over to a man who never saw it before. On the face of it he does not know whether it is fraudulent or not.

Senator SHAFROTH. In that event it would not be a conveyance for value. In that event it is a trust which the person is carrying out.

Senator HUSTING. As I understand it, if a dummy entryman initiated a claim prior to 1910 and sold whatever rights he may have had under a dummy entry to a stranger who knows nothing of the facts and the stranger pays his money he is entitled to all the provisions and safeguards of this act.

Senator PHELAN. What is he getting?

Senator HUSTING. He is getting absolute title.

Senator PHELAN. He is paying the Government one-eighth. Under the best conditions here as between owner and outsider or lessee the rates vary from one-eighth to one-sixth, except where there is a gusher.

Senator KELLOGG. Would it not be a good plan to let the Attorney General finish his statement——

The ATTORNEY GENERAL. I have finished.

Senator KELLOGG (continuing). And then discuss the bill between ourselves when we get around to it?

Senator WALSH. There is one more question. I want to direct attention to this last clause. That goes to the benefit of the man who gets the lease. That operates to the benefit of the man who gets the lease. But before he gets the lease he must pay one-eighth of everything he took out after the 23d day of February, 1915. That is correct?

The ATTORNEY GENERAL. Yes.

Senator WALSH. And the remainder of the money is held in the receivership——

The ATTORNEY GENERAL (interposing). He would get the balance.

Senator KENDRICK. I would like to ask the indulgence of the Attorney General for a moment in order that I may read this amendment.

The CHAIRMAN. Just read it where you are, Senator Kendrick.

Senator KENDRICK. This is intended to apply to my State of Wyoming. I will say that the conditions prevailing there perhaps are different from those in any other oil section. About four-fifths of the entire State is still under the control of the Interior Department, and during the past two years oil has been found in different sections of the State; in almost every instance it has been located in territories that have been passed up by Government geologists, and those geologists have in a number of cases passed adversely upon the presence of oil. They have decided that the ground did not even warrant investigation. Private parties have gone in under those conditions and have located their claims under the only law that we had—the mineral law—and have proceeded in their development. In doing that there has been an unenviable record established by the Federal Government rushing in and withdrawing the land, their withdrawals being based in almost every instance on developments and showing made by private capital. This applies particularly to every withdrawal of which I have any knowledge.

As governor of my State for the past two years I have had much to do with this oil question, and although I do not claim to know a great deal about it now I do know some of the complications.

In many cases these original filings have been made in good faith, a majority of them by people who live in the State. A little group would get together and decide to take a chance on some development, and they would proceed to file on, say, 1,500 or 2,000 acres of land. In some cases where the withdrawals have been made they have prevented men who had limited means of their own from going forward, and have simply stopped any development. Had the Government acted otherwise these men could have developed the land, but they have been prevented from doing that by circumstances of withdrawal. This amendment that I am about to read is intended to take care of those men, and men who have also located upon Government land that has never been withdrawn as yet.

This amendment is not intended to cover any case in connection with the naval reserve. It does not read, possibly, exactly as it should, but is intended to protect only the bona fide locators upon the oil lands. I want to read it to you while the Attorney General is present. I do not know that I have any right, during the discussion of the Phelan amendment, to ask him for an opinion, but I want any action of my own here to be above board and well understood both by this committee and the Department of Justice, because I have no inclination to protect or even be a party to the protection of fraudulent entries.

(The amendment referred to is here printed in full, as follows:)

That any bona fide occupant or claimant of oil-bearing lands open to location and entry, who has filed his location certificate under existing laws, and who, at the time of the passage of this act or within six months thereafter, whether upon one or a group of claims, is in diligent prosecution of work leading to discovery or preparatory thereto or designed to determine the value of the oil sands of the structure on which the same are claimed and continues to work such claims without delay except such as is beyond his control; or who within two years shall drill on each claim or location to a depth of 1,000 feet, or until oil or gas is found in commercial quantities; or who has discovered upon each claim or loction shale or oil-bearing formation, whether in place or not that, taken in connection with geological conditions, indicates the probable presence of oil or gas thereon in commercial quantities, shall not be affected thereby, nor shall his right to acquire title under existing laws be impaired. That where claims or locations were made in good faith and were of record in any withdrawn area other than a naval reserve, prior to withdrawal, and where the claimants thereof have subsequent to record expended on or for the benefit of each claim in work of the foregoing kind a sum equal to $100 per annum, or prior to withdrawal made discovery of the foregoing character on each claim (which discovery as to the same shall constitute the discovery required by existing laws), such claimants shall have the right within three months hereafter to relinquish to the United States their said claims or locations and receive in lieu thereof a 20-year lease with one-eighth royalty: *Provided*, That in case of said claims or locations conflicting and the claimants thereof relinquishing, the claim or location first initiated shall have the preference right of lease: *Pro-*

vided, That the benefit of any such relinquishment shall inure solely to the United States: *And provided further*, That the right of preferential lease shall apply to mineral rights in lands affected by the act of July 17, 1914 (38 Stat., 509).

The ACTING CHAIRMAN. Mr. Attorney General, this legislation we are now discussing is being considered by the committee largely as a method of compromising litigation. We have been urged to that at this time by the testimony showing the necessity for oil. As the legal representative of the Government, if it should appear that there was a necessity for the immediate development and production of oil in the territory in litigation, would you favor any plan of compromise of the litigation?

The ATTORNEY GENERAL. Senator, those are matters of policy that I do not really figure I have a right to go into, except in an incidental way. I do not determine the policies of the Government, of course. I am asked to enforce the laws as they are written on the statute books. When it comes to changing laws, I abstain from giving opinions. I have so many troubles of my own. As to matters of policy, I think it is better to have them determined by others connected with the administration. I think this is rather a large question and one that should, perhaps, be a matter for general executive consideration.

The CHAIRMAN. I readily recognize your position in that respect.

The ATTORNEY GENERAL. I am ready to give you all the information I can and all the help I can. I will tell you, as well as I can, what will be the legal effect of a certain policy, but these other matters are matters with which I am but remotely connected.

The ACTING CHAIRMAN. I understand your position. Of course, I had in mind that you would naturally be somewhat familiar with this litigation, and you would know, approximately, the length of time it might take or consume, by reason of your knowledge of other litigation of a similar nature. In fact, you know how long it has taken so far to reach the present stage. I would like to get your ideas, but I do not wish to press you. Now, it is my idea that if the Government needed this oil immediately, the question of compromising might become of more importance than otherwise.

The ATTORNEY GENERAL. That would depend very greatly upon the exigencies of the case, with which I am not familiar.

The ACTING CHAIRMAN. Those are the questions the committee is now considering.

The ATTORNEY GENERAL. That is a matter I am not familiar with. May I ask that the committee permit the Assistant Attorney General, who is familiar with the decisions to which reference has been made, to state our view of the decisions with respect to which the chairman and I have not seemed to agree?

The CHAIRMAN. We will be glad to hear from him on those points or on any other points that he may care to discuss.

STATEMENT OF MR. FRANCIS J. KEARFUL.

Mr. KEARFUL. The case referred to by Senator Pittman is that of the United States *v.* Thirty-two Oil Co., No. A-38 in equity, decided by Judge Bean.

One branch of the case involves the legality of what is known as the McMurty locations. They were held to be fraudulent and conferred no rights. The court had also to consider the claims arising from another source, and those depended upon what is known as the group-development theory, by which work upon one of a number of claims held by the same person or corporation is claimed to be proper to be considered as discovery work under the provision of the Pickett Act on all the claims. As I understand the opinion, the court very squarely holds against the efficacy of that group-development theory.

With permission, I would like to quote from the opinion of the court on page 24 [reading]:

> Now, it is clear, from the testimony, and in fact undisputed, that there was no work in progress or immediately contemplated at the date of withdrawal looking to discovery or intended for the discovery of oil thereon, and had not been made for some months prior thereto, if at any time, unless the drilling of a well by the oil company on another location half a mile distant, with the intention on its part, if oil was discovered thereon, to thereafter proceed with the development of the location in question is held to be such work. Whether an occupant or claimant of oil or gas bearing land, at the date of a withdrawal order was at that time engaged in diligent prosecution of work leading to discovery, is a question of fact. No hard or fast rule applicable to all cases has or can be laid down by which it can be determined. Each case must depend to a large extent upon its own facts and circumstances. General principles only can be stated. It is not necessary that the work being performed at the time of the withdrawal was on the particular tract in question, but before it can be deemed work leading to discovery thereon, it must have been such as would reasonably tend to that end and been presently and purposely designed for that purpose. Now, the drilling of an oil well on one location, would not, however long continued, lead to discovery of oil on another. It might afford evidence of the probable existence of oil on the other and justify the expenditure of money in exploring it. Indeed, it might, by disclosing the formation, materially aid in subsequent drilling and lessen the expense. This result, however, would follow, whether the well was drilled by the occupant or claimant of the land in controversy or by a neighbor, and hence I do not think that such work on one location can be held to be work leading to discovery on another.

On page 26 of this pamphlet, to which reference has been made, the court says [reading]:

> Each location, which could not exceed 160 acres, so marked on the ground and described in the notice, should be considered as a separate unit regardless of the number of such locations, contiguous or otherwise, occupied or claimed at the date of the withdrawal by any one person or corporation, and the work contemplated in the act is work leading to discovery on the particular location.

Referring to the provisions for assessment work, which are held not to apply under the provisions of the Pickett Act, and then referring to the Pickett Act, the judge said [reading]:

> * * * But we are here dealing with the rights as defined and conferred by the Pickett Act, which was designed for relief of bona fide occupants or claimants at the date of withdrawal, who had not but were then intending in good faith to make a discovery, and who were manifesting such intention by the diligent prosecution of work tending thereto, and not for one holding under paper locations or locations made for the purpose of enabling one person to acquire a larger area of mineral land by one discovery than the law permitted him to take, or one who, by means of skeleton derricks, cabins, so-called assessment work, or the like, was endeavoring to hold land temporarily for speculation or until exploratory work on adjoining property owned or occupied by him, or in the vicinity, had indicated the oil or non-oil bearing quality.

Then follows the language quoted by Senator Pittman, in which the judge says [reading]:

> I have no doubt that work could have been in progress at the date of withdrawal on one of a group of locations or even extraterritorially to any of them which could properly be held to be work leading to discovery on all, such as the

building of roads, laying of water lines, establishing camps, assembling equipment and material, and the like, if such work directly tended to and was purposely designed for the development of each location with all practical expedition.

Following that, after the citation of a number of cases, the judge says [reading]:

> But such is not the case in hand. Here the preliminary work had been done almost a year before the withdrawal and was necessary and proper for the development of the northwest quarter and had been and was being so used.
>
> All the work being done at the time of the withdrawal or immediately contemplated was on that quarter. The work on the remaining parts of the section was suspended to await results.

I understand from the facts in the Honolulu case that the last-quoted language of the court applies precisely to those facts.

The ACTING CHAIRMAN. I do not see any difference between us. It is wholly a question as to the facts. You denied, as I understood it, that there could be group work done. I understand from the position taken by you that you contended there has to be work on each claim.

Mr. KEARFUL. There is a difference.

The ACTING CHAIRMAN. Oh, no. See here, it says that "such work" on one location can be held to be work leading to discovery on another. The language he uses is "such." He says, "I do not think that such work," etc., etc. Then he gives his reasons. Then he qualifies it by saying [reading]:

> I have no doubt that work could have been in progress at the date of withdrawal on one of a group of locations, or even extraterritorially to any of them which could properly be held to be work leading to discovery on all, such as the building of roads, laying of water lines, establishing camps, assembling material and equipment, and the like, if such work directly tended to and was purposely designed for the development of each location with all practical expedition.

He held that the sinking of a well on one claim was not such work as to benefit the group, but he did not hold that the work had to be on each claim; he did not hold that you could not do work on one claim for the benefit of the group; in fact, he held directly to the contrary.

Mr. KEARFUL. He held that work could be done on one claim for the benefit of the group, and he held that work might be done on all the claims for the benefit of each claim, provided that it "directly tended to and was purposely designed for the development of each location with all practical expedition." So, although work was done which might in the beginning have been considered as opening up and developing all the locations, when it was thereafter suspended upon three of them, and continued only upon one, under that condition there was not diligent prosecution of work as to each location. That is what he held.

The ACTING CHAIRMAN. I do not think there is any difference of opinion between us as to the construction of the decision.

Mr. KEARFUL. The point was as to the bearing of the decision with regard to the facts in the Honolulu case. I say, from my knowledge of the facts in the Honolulu case, which is quite comprehensive, that the rule of the court denying the application of the group development theory in this case, applies to the facts of the Honolulu case; that this presents a stronger case upon the facts as to most of the claims than the facts in the Honolulu case.

If you will permit me, I should like to refer to one provision of the proposed amendment, which was not brought to the attention of Senator Walsh, and that is, as to the one-eighth royalty. That one-eighth is to be paid after first deducting from the gross production such oil or gas as may be used in development and operating such land. In other words, it is one-eighth of the net production.

Senator WALSH. I do not understand that to be so.

Mr. KEARFUL. It seems to be so from the language.

Senator WALSH. I think not. As I understand it, it means this: As soon as a well is drilled on a piece of land, and oil is produced from it, they use that oil in carrying on their further drilling operations on that land. If they use that oil in carrying on drilling operations on the land, that is not to be counted.

Mr. KEARFUL. That is a possible construction.

Senator WALSH. That is the plain construction, is it not?

Mr. KEARFUL. No; I think not.

Senator WALSH (reading):

> * * * After first deducting from the gross production such oil or gas—

That is to say, oil or gas from the land [continuing]—

> as may be used in development and operating of such land.

Mr. KEARFUL. "And operating." I should say that would be used in development and operation if it were sold and the proceeds used to pay operators.

Senator WALSH. Oh, no.

Mr. KEARFUL. I simply wished to call attention to that.

Senator WALSH. That is oil that is marketed. This is oil or gas used in development. You would not want to charge for oil they burn up in drilling. You would not think of doing that, would you?

Mr. KEARFUL. I was only suggesting that instead of this being one-eighth of the gross production, there is some deduction from the gross production before the one-eighth.

Senator WALSH. I fully agree with you, if they took any of the oil off and marketed it, they should not be credited with any money they got from that, even though they spent that money in developing the land, but it does not say the gross receipts from; it says, deducting from the gross production of oil, such oil or gas as may be used in development or operation. That is to say, if they were carrying on pumping operations, they would have to burn up some oil, and the oil so burned up in the pumping operations, they would receive credit for.

Senator HUSTING. Attorney General Gregory stated that the master in chancery found certain facts, relative to a going royalty paid for oil between private parties. In those agreements, do they make a similar deduction?

Mr. KEARFUL. This was a report made by the master to the court, for the purpose of enabling the court to fix the amount of damages that the Government would be entitled to against the defendants, the merits having already been decided.

Senator HUSTING. Yes; I understand that.

Mr. KEARFUL. And the master reported upon that, as follows:

> During the occupancy of said lands by said defendant and its predecessor, it is found, upon stipulation of the parties herein, that the usual and customary

royalty value of oil in place in section 32, in the vicinity of said lands, before any wells were brought in, was one-eighth; after wells were brought in, provided they were ordinary wells and not gushers, the royalty was one-sixth; after gushers were discovered and brought in, the royalty was one-fourth, all of gross production and payable in kind.

Senator HUSTING. Gross production?

Mr. KEARFUL. Yes, sir; and payable in kind.

Senator HUSTING. That means there is no reduction of the oil from the gross production contemplated——

Mr. KEARFUL. That was the report of the master.

Senator WALSH. Now, is it? You are endeavoring to find out the gross amount of oil produced by the land. It has produced—has actually pumped out—100,000 barrels, but 10,000 of those barrels have actually been burned up in pumping. Now, 90,000 is the gross production, is it not?

Mr. KEARFUL. I should say 100,000 would be the gross productioon. The amendment itself says it shall be deducted from the gross production.

Senator WALSH. This admits he does not take into account the oil burned up in doing the pumping.

Mr. KEARFUL. He does not say anything about it.

Senator WALSH. Do you understand he does not?

Mr. KEARFUL. I would have understood it that way.

Senator WALSH. Upon reflection, do you not think it altogether likely that he has deducted the oil burned up in pumping?

Mr. KEARFUL. No, Senator; I should not say so.

Senator HUSTING. This oil that has been burned up has to be taken out before it can be burned up.

Mr. KEARFUL. It is a part of the production.

Senator HUSTING. It is a part of the production before it goes into the aid of further production. So it is primarily a part of the gross production. Now, I want to ask if you know of any leases covering this same situation, either private or public, where a similar production is provided for?

Mr. KEARFUL. I am not familiar with the commercial leases, Senator. I suppose that the Commissioner of the General Land Office could probably answer that, or any gentleman familiar with the custom of the country.

Senator WALSH. Take the ordinary oil lease. A man sinks his wells and has a production by which he pays royalties and he burns up some of the oil in doing the pumping, so that when he puts it into the pipe line and it goes down into the refinery, 5, 6, 10, or 15 miles away, do you figure that he pays royalty on the amount that comes up out of the ground, including the amount he burns up doing the pumping, or do you figure that the amount would ordinarily be measured where it goes into the pipe line?

Mr. KEARFUL. I should figure that the amount burned in pumping was one element of the operating expenses, just as the payment of wages of operators; and he may have burned coal. It might have been more convenient and inexpensive to burn coal, in which case the gross production would be all the oil produced.

Senator WALSH. You do not know what the practice is?

Mr. KEARFUL. No.

Senator **Walsh**. You would not be astonished to know that the ordinary practice was measured by the pipe line; you would not be astonished to learn that is the case, would you?

Mr. **Kearful**. I would not be astonished; no.

Senator **Husting**. I want to say that I do not know anything about the practice, but I read the Osage leases and my best recollection is there is no such regulation in them.

The **Acting Chairman**. I ask permission of the committee to put in a few excerpts from which I will read, from the decision of the Land Office, in the Honolulu case immediately after Mr. Kearful's testimony in regard to this decision that he read from, being No. A–38, in which he states he takes this decision as his belief for winning the Honolulu case. I will put it all in so that it may be available.

(The excerpts referred to will appear at the close of the Attorney General's testimony.)

I want to draw the distinction where I think Mr. Kearful is wrong. The case he quoted from was where there was nothing done except the sinking of a well upon one of a group of claims. In the Honolulu case the Land Department says:

> The preliminary work of surveying, road building, water supply, and temporary camp buildings was directed uniformly to the ultimate practical and economical development of a great property as a unit, involving for its successful achievement the future expenditure of millions of dollars where the development of a single claim would involve a mere fraction of the amount, and all of this was necessarily pioneer work in advance of the hauling of supplies and materials to build the derricks necessary to even commence the work of drilling.
>
> One of the principal elements in the inception of work necessary to develop this property as a unit, therefore, was either the building of a road to the nearest available water supply on Section 1 or the laying of a pipe line with the installation of pumping machinery, or both. Each of these plans of furnishing water was fully and effectively accomplished long prior to the Executive withdrawal of September 27, 1909, the necessary preliminary roads having been built to every section of land involved in the locations embraced in the one unit of operation prior to said withdrawal. Many other necessary roads were cut and graded to this property for the hauling of heavy materials from the town of Maricopa and railroad sidings long prior to the September 27, 1909, withdrawal, and to all of which more specific reference is made hereinafter.

It goes on and shows the occupation prior to 1909; shows the general development prior to 1909; shows the building of roads prior to 1909; shows the surveys prior to 1909; shows the drilling of a prospect well prior to 1909; shows the establishment of a camp prior to 1909; shows the installation of a water system, with a 2-inch preliminary pipe line laid January, 1909, from the edge of Buena Vista Lake to section 10, some 13,000 feet, where the first drilling operations started——

Mr. **Kearful**. Does he show the suspension of work pending the drilling upon one of the claims for the purpose of procuring gas? Does he show the fact that the prospect well drilled on section 10, which was privately owned land, was completed in August, 1909, and that, by the exercise of the same diligence which was used on section 10, the same discovery could have been made on each and every quarter section?

The **Acting Chairman**. I say now, Mr. Kearful, you are getting away from the question of group work to a question of due diligence

The same court (Judge Bean) in another case has decided what constitutes diligence. What I am attempting to get at you are attempting to draw a comparison in the case you quoted from, where the court found there was nothing done except the starting or the sinking of one well on one claim, and found it was done purely for the purpose of holding other claims until he found out whether there was oil there. In the Honolulu case, on the question of intent, as to group development, the court, which is the Land Office, finds exactly opposite. It finds that there was a bona fide intent to develop the whole group, and that to do that they built roads, water systems, built a general camp, and they did everything that was necessary to develop that group. Now, in answer to that question, you come back with a proposition as to whether or not there was due diligence in the consummation of the work after withdrawal.

Mr. **Kearful**. No, sir; you are mistaken, Senator. I am familiar with the finding of the Land Office and I am also familiar with the facts. The work to which you refer related to the necessary work to drill a prospect well on section 10, which was privately owned land, and the intention, which was very clear to my mind, from the circumstances of the case, was that if that prospect well failed on section 10, where they established a camp, no more drilling would have taken place, and that well having been a success they went on seriatim, drilling other wells, suspending operations until they could bring in additional water, having had enough to drill only on section 10, and get additional fuel and a few other things additional for the puprpose of drilling all those wells, whereas, by the exercise of the same diligence on section 10, they could have drilled a well on each of the other quarter sections, by the time they had drilled on section 10. The fact was the work was suspended on all sections, and the building of cabins and taking possession of the different sections and the erecting of derricks was merely a pretense.

The **Acting Chairman**. How much money did they spend in that pretense?

Mr. **Kearful**. That is aside from the question. The money was actually spent for drilling on section 10.

The **Acting Chairman**. I understand they spent $3,500,000 in that so-called pretense. That is the figure.

Mr. **Kearful**. After all the improvements were made and the discovery on section 10, they spent many millions of dollars which they would not have spent if they had not discovered that oil.

The **Acting Chairman**. I am going to put this decision of the Land Office in immediately after Mr. Kearful's discussion of the case, so it may be there in full. If it discloses any similarity with the speculative case discussed by Judge Bean, it will be shown.

Senator **Husting** (addressing the Attorney General). I would like to ask you whether the Department of Justice conceived the decision of the court in these two cases you have mentioned, which the Government lost, to be correct and whether the department may appeal from these decisions.

The **Attorney General**. I am not prepared to say, just at the moment. Of course, where there is a controversy of fact and the court finds against you, that is a pretty hard matter to take up. In a case of that kind, we do not usually take it up, unless there is some special feature about it. In the other case, though, we will likely take it up.

(The excerpts from decision of the General Land Office in the Honolulu case are here printed in full, as follows:)

ENTRIES CLEAR-LISTED.

DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
Washington, December 15, 1915.

Chief of "N":

The following Visalia mineral entries were made by the Honolulu Consolidated Oil Co. for described lands in T. 32 S., R. 24 E., Mount Diablo meridian, California: 03495, April 30, 1915, N. ½, sec. 14; 05124, April 30, 1915, SW. ¼, sec. 4; 05125, April 30, 1915, NW. ¼, sec. 8; 05126, April 30, 1915, SE. ¼, sec. 4; 05127, April 30, 1915, SW. ¼, sec. 8; 05129, April 30, 1915, SE. ¼, sec. 8; 05128, April 30, 1915, SW. ¼, sec. 12; 05130, April 30, 1915, SW. ¼, sec. 14; 05132. April 30, 1915, lots 1 and 2 of NE. ¼, sec. 4; 05133, April 30, 1915, SE. ¼, sec. 14; 05134, April 30, 1915, NW. ¼, sec. 12; 05252, May 29, 1915, NE. ¼, sec. 8.

The locations upon which possessory right to all these claims is based were all made prior to the first withdrawal of the land from disposition under the mining laws pending field investigation and report as to the validity of existing claims. This withdrawal bore date of September 27, 1909. Since that date the land embraced in these entries has been withdrawn under the provisions of the act of June 25, 1910, by Executive order of July 2, 1910, and by Executive order of December 13, 1912, it was included in Naval Petroleum Reserve No. 2.

A careful field examination of these lands has been made with the result that a discovery of petroleum in commercial quantity and quality is shown to have been made upon each claim, and the several locations are found to have been made and transferred to the applicant company in good faith by associations of eight or more qualified persons.

While the applicant company is relying upon section 2332, Revised Statutes, for title in all its applications except 03495, and therefore in such cases has not submitted abstracts of title, the special agent reports that:

"The company has very kindly loaned for use of this office its abstracts of title for said lands, and in addition thereto a separate examination has been made of the records of the county in which the lands involved are located."

Said mineral entries are accordingly clear-listed as to the question of character of land and discovery, and bona fides of the locations on which possessory title is claimed.

The only other question brought out in the field investigation for consideration is that of whether work leading to discovery of oil or gas on each of these claims was being diligently prosecuted at date of the 1909 withdrawal and thereafter to discovery.

With the agent's reports on this question were transmitted copies of the following affidavit by Mr. William Matson:

"William Matson, being first duly sworn, deposes and says: I am the fully authorized agent and attorney in fact of the Honolulu Consolidated Oil Co., a corporation, applicant for patent herein. That following is a statement of the work done on and in the development of certain mining claims in township 32 south, of range 24 east, Mount Diablo meridian, Kern County, Cal.:

"*Purpose.*—In an endeavor to insure, against any possible monopoly, a future supply of fuel oil at a reasonable price for the vessels of the Matson Navigation Co.'s fleet, the sugar plantations of the Hawaiian Islands, and other industries with which myself and associates were connected on December 14, 1908, I, through L. A. Crandall, as agent, entered into an agreement with the owners of section 10 and the southwest quarter of section 2, all in township 32 south, range 24 east, Mount Diablo meridian, for the development for oil of said property, with the option to purchase said land; and in December, 1908, January, 1909, and March, 1909, through the same agent, I entered into agreements with certain locators covering the exploration for and the development of oil in the north half and southeast quarter of section 2 and all of sections 4, 6, 8, 12, 14, 24, and 26, all in township 32 south, range 24 east, Mount Diablo meridian, which was at that time vacant Government land and open to entry, and which land had been duly and lawfully located by the said locators in full compliance with the provisions of the placer mining laws of the United States, all long prior to the Executive withdrawal of September 27, 1909.

"*General.*—At the time these agreements were entered into the nearest property to the lands in question then producing oil or being drilled for oil was along the foothills about 6 or 7 miles southwest of section 10 above referred to, and I was at that time frequently told that it would be a foolhardy proposition to spend the large amount of money which would be required in drilling and exploring for oil in the Buena Vista Hills, because of remoteness to proven fields. The claims were rolling land in a very rough, arid, and inaccessible neighborhood cut up by gulches, dry watercourses and ravines, and desert land in character. No roads then existed on the property, but the topography of the hills made roads imperative. The nearest town for the purchase of suuplies, fuel, and domestic water was Maricopa, some 9 miles distant from the location of the first prospect well. At that time no water supply whatever was available in the Buena Vista Hills, where these lands are situated. The nearest water available was limited to a small well on section 1 at the edge of Buena Vista Lake, a distance of some 5 or 6 miles from the extreme ends of the property in either direction, as the crow flies.

"The preliminary work of surveying, road building, water supply, and temporary camp building was directed uniformly to the ultimate practical and economical development of a great property as a unit, involving for its successful achievement the future expenditure of millions of dollars, where the development of a single claim would involve a mere fraction of the amount, and all of this was necessarily pioneer work in advance of the hauling of supplies and materials to build the derricks necessary to even commence the work of drilling.

"One of the essential elements in the inception of work necessary to develop this property as a unit, therefore, was either the building of a road to the nearest available water supply on section 1 or the laying of a pipe line with the installation of pumping machinery, or both. Each of these plans of furnishing water was fully and effectively accomplished long prior to the executive withdrawal of September 27, 1909, the necessary preliminary roads having been built to every section of land involved in the locations embraced in the one unit of operation prior to said withdrawal. Many other necessary roads were cut and graded to this property for the hauling of heavy materials from the town of Maricopa and railroad sidings long prior to the September 27, 1909, withdrawal and to all of which more specific reference is made hereinafter.

"*Occupation.*—To effectively accomplish immediate occupation of this entire property as a unit for economical development it was necessary to establish a main or general camp near its center. Temporary camp quarters were therefore established on section 10 in January, 1909, as a central point of the entire property. Light lumber for the erection of cabins was hauled to each quarter section upon which location had been made by the aforesaid locators, and cabins were completed and occupied by March 8, 1909, with the exception of the two south quarters of section 4 and the two north quarters of section 14; on each of said quarter sections full drilling rigs were at that date, or more than six months before withdrawal of 1909, completed and erected, these quarter sections being within reasonable distance of the temporary main camp erected on section 10.

"*General development.*—It was apparent that only by a comprehensive general development scheme, working from a common center, could the property be developed in an economical and efficient manner, and such a scheme was laid out with the idea of a permanent main camp and headquarters on section 10 as central to the property.

"*Roads.*—In January, 1909, an initial road was cut and graded from the foothill road up to section 10, some 7 or 8 miles, for the hauling of heavy materials from the town of Maricopa and railroad sidings, more than 14 miles of roads being completed and in use prior to September, 1909. This road was continued by the cutting and grading of a road through the property to the north and west and leading down to the town of Moron from the west end of the property. Branches from this road were continued to the different quarter sections for the hauling of rig lumber, machinery, etc. This entailed very costly and continuous work, owing to the broken nature of the country and the looseness of the surface soil, which would not 'stand up' under rain or heavy teaming and required constant repairs, until finally a complete system of oiled roads resulted in approximately 40 miles in extent.

"*Surveys.*—The necessary preliminary survey of all section corners, quarter-section corners, and locations for rigs and cabins was completed in the month of

January, 1909, or more than eight months prior to first executive withdrawal, and further surveys, later conducted, definitely established section corners, quarter-section corners, roads, pipe lines, buildings, etc.

"*Prospect well.*—The drilling of a prospect well at the main camp of the entire property on section 10 was commenced by the cable method in the month of January, 1909, the water for boiler and drilling operations being supplied through a 2-inch pipe line laid from the small well at the edge of Buena Vista Lake; the boiler fuel being crude oil hauled from Maricopa some 9 miles distant in tank wagons. When drilled to a depth of 1,440 feet, on June 16, 1909, the well blew out with dry natural gas, producing an estimated quantity of 8,000,000 cubic feet per day, with an estimated closed-in pressure of between 400 and 500 pounds to the square inch. The well threw large quantities of rock and shale in the air and made it a dangerous locality to be in. A wild gas well of these proportions was a new experience in California and for two or three months, while the well was blowing wild, every effort was exhausted to locate and engage somebody with experience enough to handle the situation and close in the well, until on September 3, 1909, the services of Mr. John A. Pollard, who had had experience in high gas pressures in Texas, was engaged and sent to the property with instructions to close in the well if possible and to report generally on the whole situation of drilling the entire property in accordance with the different agreements, because of the probable presence of this high-pressure gas in the whole territory. Mr. Pollard, who is now in the employ of the United States Bureau of Mines, displayed great ability in closing in the well and killing the gas pressure, which was accomplished by October 4, 1909, and he was therefore given entire superintendency of the work with instructions to complete the general scheme of development adopted from the beginning. The prospect well was successfully drilled through the high-pressure gas strata and into th oil formation, the well coming in on February 1, 1910, with a production of about 100 barrels daily of 29° Baumé gravity oil.

"*Camp.*—It was found necessary on each individual section to establish camps for the drilling crew, and in the case of section 4, owing to the location of the first wells, two camps were needed. These were completed in each case before drilling operations commenced and consisted of comfortable living and dining quarters, cookhouse, refrigerator, domestic and drinking water supply tanks. All quarters were piped up from natural gas supply for cooking, heating, and lighting as soon as gas was available. The permanent main camp was located on section 10 as being central to the property and consisted of warehouse, blacksmith shop, machine shop, boiler plant, relay water pumping station, carpenter shop, tool rack, pipe racks, barn, garage, ice house, cookhouse, and dining room, bunk house and bathhouse for the single men and dwellings for the married men, officials, foreman, and superintendent. The temporary camp centrally located on section 10 in January, 1909, by gradual and progressive addition and improvement as exigency and the economical development of the property as a unit required, became in the course of one and a half years as model and complete a camp as may be found in any oil district in the entire State of California. The camp has been largely added to since that time in the way of ice-making plant and cold storage, oil tankage, etc. Until large machine-shop tools and heavy steam hammer were installed, necessary big repairs and the making of heavy special tools were carried out in machine shop at Maricopa or Moron.

"*Water system.*—It had been expected that wells could be drilled by the cable or California method, but the presence of so much high-pressure gas above the oil measures, as discovered in the first well, made it imperative that drilling through the gas strata must be done by the rotary method. This method required the continuous circulation of mud-laden water down the drill stem and returning up the walls of the hole, and required a very large increase in water supply over that required for the California or cable method. A 2-inch preliminary pipe line had been laid in January, 1909, from the well at the edge of Buena Vista Lake up to section 10 (some 13,000 feet), where the first drilling operations started, and the amount of water which could be put through such line with the original pumping equipment was, of course, entirely inadequate for the general development scheme. Orders were placed in the East for sufficient 4-inch line pipe to complete a general water system, and 2-inch line pipe bought locally was laid and completed on August 18, 1909, or a month prior to the first executive withdrawal, for branch water lines to drilling locations on different quarters of section 14, amounting to 8,496 feet of pipe. To further complete and carry out the unit system of development, a new triplex pump, driven by a 40-horsepower gas engine, was installed at the lake pumping plant by the end of March, 1910. This increased pumping capacity could not do efficient work through the 2-inch line then in use. The 4-inch line pipe then under order from the East was delivered, laid, and completed from pumping plant up to storage tank (of 210,000 gallons' capacity) on section 10, at an elevation of 410 feet above the lake, by April 16, 1910, and branch lines were already completed to the southwest corner of section 24, and southeast corner of section 4 (3½ miles and 1 mile, respectively), at which points, according to the general scheme of development originally adopted, wells were already being drilled.

"Sufficient water had been available from the well for delivery through the 2-inch line for camp purposes and drilling three wells, but it was very soon proved that the well would be short of capacity. The well was enlarged with the idea of increasing its supply, but without material results, and finally permission was secured from Miller and Lux to use the water from Buena Vista Lake. This water was very suitable for boiler water, but on account of so much decayed vegetable matter and so many dead fish in the lake it was 'impossible' as a domestic water, and in consequence arrangements had to be made to haul in, and later pipe in, domestic water for camp use. Drinking water was always hauled in by tank wagons prior to the installation of pipe lines to furnish same.

"After the completion of the 4-inch line, with its extra pumping capacity and lake supply, it was found possible in the general scheme of development to deliver sufficient water to start up four more wells in the month of May, 1910, and the completion of the storage tanks at high elevation on sections 4 and 14 and the extensions of the water main with relay pumping station on section 10 admitted of four more wells being started in June, two in July, two in August, and one in September, 1910, as progressive steps in the general scheme of development. Certain of these wells, however, were started by cable method, which required very little water as compared with the rotary method, but the method had to be changed to the rotary after a few hundred feet of 16-inch stovepipe casing had been set in each such well. When the water supply grew to be inadequate for the large number of wells already so started work on some had to be suspended until others were completed one by one, admitting of diverting the water supply to the suspended wells. It was found that even by working the pumping plant 24 hours a day through the 4-inch and 2-inch lines sufficient water for all purposes could not be delivered, and it was decided to parallel the lines with another 4-inch line and install a duplicate pump and 40-horsepower gas engine. This installation, with an additional steam pump at relay station on section 10, was completed in July, 1911. This addition to the system admitted of all necessary water being delivered by pumping not to exceed 18 hours a day. The completed water system for domestic and drilling purposes approximated 30 miles of pipe lines.

"*Fuel system.*—The fuel, next to the water question, was the most important, and until the gas well on the northwest quarter of section 14 was completed and gas fuel available oil for fuel was purchased for the drilling of the first three wells at the price of 70 cents per barrel f. o. b. Maricopa, the hauling charges on which amounted to $1 per barrel, as only about 12 to 15 barrels could be hauled at one tank-wagon load, and, owing to the distance—9 miles each way—over the hilly roads, even after they had been graded sufficiently to get started, only one trip a day could be made.

"The gas well referred to was drilled into the 1,600-foot stratum on April 30, 1910, and was completed, connections made, and gas line run to the oiler at drilling location on the northeast quarter of section 14 by May 17, 1910, on which date drilling was commenced on this well, the rig, oilers, and all necessary apparatus having been built and installed prior to January 2, 1909. The regular gas fuel system, with ranch lines laid to drilling locations on each quarter section, was then carried to completion, and a maximum pressure of 200 pounds per square inch was established as a safe pressure for the service lines. This was not quite adequate, owing to line friction, for a large amount of drilling at the extreme ends of the property, which extended some 5 miles in different directions from the well.

"Later on, when gas supply was available from the well on the southeast quarter of section 4, the new supply was used for all work on sections 4, 6, and 8, and the original well on the northwest quarter of section 14 was used to supply the main camp and for the drilling and development work on the east end of the property.

"The completed gas system for fuel, heating, and lighting purposes amounted to about 20 miles of pipe line.

"*Drilling rigs and equipment.*—In the months of December, 1908, and January, 1909, lumber for five complete drilling rigs, one for each of five claims, was shipped to Maricopa and unloaded, and as soon as preliminary roads were completed to allow the hauling of same the material was hauled and distributed to various locations and erected where it was intended to do the first drilling, and in the first half of the month of July, 1909, seven additional complete drilling rigs, one for each of seven claims, were shipped, hauled, and distributed as the completion of roads would permit, and were erected on the different claims. All of this work was conceived, executed, and completed long prior to the withdrawal of September 27, 1909, and constituted progressive steps in the general scheme of development of the entire property as a unit.

"Upon consideration of the necessary general development scheme, and when the conditions of supply of water and fuel were more thoroughly understood, it was found that the important factor governing such drilling would be the delivery of water and fuel at the drilling locations, and in order to avoid the necessary repairing of erected rigs, due to deterioration from weather conditions, it was decided to suspend further shipment of drilling rigs until the water and fuel systems were further along in their process of development.

"In the latter months of 1909 and in January, 1910, the heavy timbers and foundations of seven more drilling rigs, one for each of seven claims, were shipped and erected. These latter shipments of part rigs were made on account of the fact that it had been found the light lumber of the upper part of the full rigs already erected had been checked and warped badly by the terrific heat of the summer months and required, in consequence, to be rebuilt in their upper portions before drilling operations could be started. The completion of these latter rigs and the shipment of the balance of the full rigs required was accomplished in due course as the completion of the general water and fuel system to the several locations was accomplished and the erection warranted.

"On the advice of Mr. Pollard, rotary gear and equipment were ordered from Texas, in which State this method of drilling had been brought to more or less perfection. This necessarily involved delays, due to the length of time necessary for such long-distance deliveries.

"*Telephone system.*—A private telephone line was installed and completed sufficiently for use on or about January 1, 1910, connecting the office of the main camp with public telephone exchange at Maricopa, some 9 miles in extent, and a complete system of telephone communication between each drilling well and the main camp, office, and warehouse on section 10 was also arranged, branch line to each well being completed before drilling was started. Connections were also made to the principal buildings and dwellings of the main camp, so that foremen or leading workmen could be called at any hour of the night should necessity require it.

"When the town of Moron developed to the extent that its supply houses and railroad unloading facilities were more suitable as a shipping and purchasing point than Maricopa, the telephone system was extended to that point. The completed telephone system amounted to approximately 30 miles.

"*Oil system.*—Steel tanks were erected for oil storage on section 10 of a total capacity of 83,500 barrels, and tanks were erected also on section 8 of a combined capacity of 60,000 barrels. These were erected as occasion required when the different wells were about to be brought in and were connected up with 6-inch, 4-inch, 3-inch, and 2-inch pipe lines as found necessary to the pumps and flow tanks of sump pits at the several wells.

"*High-pressure gas for public utilities.*—Connections were made for supplying gas in the month of November, 1910, for domestic purposes to the town of Moron, and later the system was extended to supply the town of Maricopa. Until the supply was completed at the southeast quarter of section 4 this supply was taken from the well on the northwest quarter of section 14. After the completion of the former well and in the month of November, 1911, deliveries were made to the California Natural Gas Co. for supplying natural gas for domestic and industrial purposes in and around the Midway field and the town of Bakersfield.

"As the other different gas wells were completed they were connected up by 6-inch and 4-inch field lines to a 10-inch main header system on section 8, and the header system at that point was connected to the main pipe line and meter station of the Midway Gas Co., to which company natural gas, since May, 1913, has been delivered for domestic and industrial purposes in Los Angeles County.

"*Formation and drilling.*—It was originally expected that wells could be drilled by the cable or California method, the rotary method being little understood and very unpopular in California, principally for the reason that by this method there was always the possible danger of the pressure of mud in the hole driving the oil back into the formation without its presence becoming known. The nature of the formation, as disclosed by the drilling of the prospect well, and the presence of such high-pressure gas above the oil formation, compelled, however, the adoption of the rotary method of drilling at least through the gas strata; but vagrant gas was struck at depths where least expected, and in one well on the northeast quarter of section 8 caused a serious blow-out when well was being drilled with cable tools at a depth of less than 900 feet. The gas caught fire and consumer everything in the vicinity of the well, the pressure being so great that it blew the 12-inch tools and some of the 12½-inch casing out of the well. The formation changed so much from one well to another that no set method could be adopted to meet all conditions. In some wells the bowlder formation extended for 1,000 feet, which made drilling by the rotary method extremely slow, and in other wells hardly a bowlder was noticed. In some wells the shales caved badly, and where this happened for weeks together all efforts were exhausted in trying to mud up the walls of the holes to restore circulation. Manure by the carload was put into some such wells, and as many as 200 sacks of sawdust were pumped in with the mud into others in an effort to plug off the porous strata and get returns of the circulating fluid. The formation in some of the wells made very little mud in the actual drilling, and until a bed of clay suitable for mud mining was found on the surface of the property it was necessary to ship down periodically carloads of mud from San Francisco Bay, 300 miles distant. The high-gas pressure encountered in the drilling caused serious blow-outs, and a pressure as high as 1,260 pounds to the square inch was recorded on the gauge of the first well drilled on the northwest quarter of section 8. This was successfully drilled through without a blow-out, but it took months to overcome the gas pressure and accomplish it. Only by the use of very high-grade valves and specially designed high-pressure mud pumps, blow-out preventers, and fittings was such drilling accomplished. The usual make of such fittings imported from the eastern fields, where natural gas of lower pressures is encountered, were of no use against the high pressures encountered in the Buena Vista Hills.

"These high pressures prevail principally from the center to the west end of the property, and the first well drilled on the southeast quarter of section 6, under a pressure exceeding 1,000 pounds per square inch, blew out several times, making a flow, as measured by experts, of over 50,000,000 cubic feet open flow in 24 hours. On one of these occasions the well caught fire and burned for about three weeks before means could be adopted to put it out, and this was only accomplished by suspending operations on a large number of the wells at the west end of the property, and hauling the boilers from said wells, some 16 in number, to this well, to get a large body of steam concentrated at the base of the fire. Just how serious this was can be imagined from the fact that the blaze was 250 feet high and 40 to 50 feet in diameter. The total expense on this well amounted to $61,263.55, and when it was finally completed and gas turned into line it was delivering less than one month, and had put out not to exceed 50,000,000 cubic feet of gas, when it again blew out and filled to the top with shale, sand, and bowlders, and was capped and abandoned.

"On the east and north ends of the property the formation seems to have a pronounced dip with a tendency to slide, making it difficult to drill straight holes, and a number of wells had to be started a second time, and some a third time, on account of crooked holes. Some of these wells, when abandoned, had several hundred feet of casing in them.

"In the extreme east and southeast portions of the property, consisting principally of sections 24 and 26, and the east half of section 12, the oil measures, if they exist, are very deep, and four wells on section 26 have been drilled to depths of 3,608 feet, 4,422 feet, 3,810 feet, and 4,906 feet, respectively, without results, after an expenditure of some $360,000 on that section of land. The costly nature of the drilling and hazard in the undertaking warrant large producing wells as compensation, but such wells as have been developed on the southwest quarter of section 4, 125 barrels per day; the northwest quarter of section 12, 60 barrels per day; the northeast quarter of section 14, 120 barrels per day; the southwest quarter of section 14, 100 barrels per day hardly, warrant the investment and would have to have long lives to repay the original expenditures.

"No wells of the gusher class have as yet been brought in on the property, although one well that averaged 1,000 barrels per day for three years was brought in on the northwest quarter of section 8, and is still producing constantly, but at a diminishing quantity.

"*Financial.*—From a business standpoint the proposition of developing this property could not have been entertained unless the prospects were that a large acreage of profitable oil territory would result, owing to the heavy expenditures of money involved as required for its development. It was of course possible that all of the territory would not be commercially profitable, and up to date over 2,000 acres of the 4,960 acres coming under the locators' agreements is possibly too deep for the present known methods of drilling to be commercially profitable.

"On the territory so far drilled without substantial results, not less than $720,000 has been spent in its drilling and exploration, from which no return can be expected, as some of the wells were drilled to a depth of nearly 5,000 feet without result warranting further development at the present time.

"Up to the month of April, 1913, the monthly receipts were considerably less than the monthly expenditures, and in August, 1913, an assessment of 10 per cent, amounting to $300,000, was obliged to be levied to pay off some of the indebtedness. This assessment was paid in by the stockholders, approximately 500 in number, and by its aid and the earnings of the balance of the year the company was out of debt by December, 1913, up to which time over $3,100,000 actual cash had been expended in the necessary outlay incident to the development of these located lands. This sum was made up from the original sales of stock and assessment on same, together with the total receipts from the sales of all oil and gas produced from the property. This amounts to an average expenditure of $100,000 per claim for each of the 31 located claims; or, eliminating the 14 claims, on which the results to date have not been encouraging, the average would be $180,000 per claim, or over $1,100 per acre.

"*Final.*—This development was entered into after determining the bona fide character of the locations. The land was entered upon in good faith and peaceable, lawful, and undisturbed occupation of the land made, and we have been continuously in such peaceable, lawful, and undisturbed occupation and possession of the claims referred to for over six years last past, claiming the same and during all of this time working continuously and diligently, doing such work as was necessary and leading to the discovery of oil or gas on each of the claims under the general development scheme as a business proposition, and as herein described.

"All of the work under the scheme was purposeful in character and no useless expenditures were made. The roads that were built were necessary roads, and the water, gas, and telephone systems and other work were as essential, purposeful, and as necessary as the roads, and this general development work was initiated and carried on solely for the benefit of each and every of said located claims as a whole.

"All of the foregoing applies to each and every individual claim, included in the foregoing described Government land, upon which we have made a legitimate discovery of oil or gas in commercial quantities and for which claims I have as lawful agent of the Honolulu Consolidated Oil Co. applied for patent."

Relative to this and other information furnished by the applicant company in the course of the investigation, the special agent under date of July 12, 1915, states as follows:

"In the investigation I have made the applicant has furnished me with everything called for. No misrepresentations have been made so far as I have been able to determine; in fact, the evidence which I have secured from other sources corroborates the evidence furnished by the Honolulu Consolidated Oil Co. The applicant has taken the attitude that when the work on the whole property in connection with all the difficulties encountered, it can not be said that it has not faithfully endeavored to prosecute the work with diligence."

Under date of September 13, 1913, a mineral inspector of this office reported as follows on the question of inspection and diligence of work leading to discovery:

"I have gone over the financial records of the Honolulu Consolidated Oil Co. at their head office in San Francisco and studied the receipted bills and reports made by the field managers in 1906 and 1909, and learned that the developments for oil in the Buena Vista Hills holdings of the Honolulu Consolidated Oil Co. have been carried on in a businesslike way and systematic manner, keeping in view at all times the relation of the separate improvements to the holdings as a whole.

"The lands claimed by the Honolulu Consolidated Oil Co. in the Buena Vista Hills consists of secs. 2, 4, 6, 8, 10, 12, 14, 24, and 26, all in T. 32 S., R. 24 E., Mount Diablo meridian.

"On the 12th day of December, 1908, development work was commenced on the above described property by the entering into possession thereof, and the building of workmen's cabins on each quarter section.

"This was immediately followed by the surveying to establish Government section corners, and to arrange locations for drilling rigs and camps. Also surveying for the making of roads suitable for heavy teaming and for pipe lines, for gas fuel, and water and telephone lines.

"The necessary cuts and fills were started to establish proper roads for teaming to reach all parts of the property. The broken nature of the country caused road making to be very expensive.

"Drilling rigs for each location were then built, together with the necessary boiler plants, including machinery, pumps, forges, and drilling outfits.

"The well at the edge of Buena Vista Lake in section 1 was developed for the supplying of water for camp building operations and was fitted with pump, gasoline engine, and pipe line.

"The laying of branch pipe lines for gas fuel and water was then proceeded with, including the installation of telephone lines connecting with the main camp.

"Camps were next constructed on each section for the operating crews, and these consisted of bunk houses, cookhouses, etc.

"Domestic water system consisting of the installing of galvanized storage water tanks and piping were fitted for the use of all of the individual camps.

"The main camp in section 10 was then laid out, consisting of buildings for the dwelling of the field manager, general office and dwellings of foreman and officials, bunk houses, bathhouse, cookhous, warehouse, blacksmith and machine shop, boiler plant, water pumping plant, ice house, garage, barns, etc.

"The water plant for drilling operations, of 250,000 gallons daily capacity, was erected and consisted of a Gould Triplex pump operated by a 40-horsepower gas engine in buildings at the Buena Vista Lake, and connected through about 8 miles of 4-inch water main with three tanks of 210,000 gallons capacity each, the tanks being located at elevations suitable for distributing by gravity flow to all drilling operations. The tanks were connected to the drilling operations in their different localities by branch lines.

"Gas well on the northwest quarter of section 14 was drilled for the purpose of supplying gas for fuel, heating, and lighting to all of the different camps and drilling operations.

"Gas system with the necessary regulating valves for the different pressures required in firing boilers and forges, heating and lighting at the different camps was installed together with about 8 miles of 4-inch mains.

"Owing to the encountering of excessive gas pressures, particularly in sections 4, 6, and 8, it was necessary to design and have made special drilling tools and blowout preventors to carry on the work. Considerable expense and delay was incurred by gas blowouts on sections 4 and 6, and the ignition of the gas at one of the wells on section 6 destroyed considerable equipment and caused delay and expense in the operations of the other wells, due to the shutting down of them and hauling the boilers to overcome the fire.

"An increase in the water system was found imperative owing to the nature of the formation to be drilled, and the necessity for drilling with the circulating system, and duplicate machinery consisting of the Gould Triplex pump, of 300,000 gallons daily capacity, operated by a 40-horsepower engine, was installed with the necessary pipe lines, etc.

"By analysis of the fas coming from the wells on sections 14, 10, 4, and 6, it was found that a sufficient percentage of heavy hydrocarbons was present to warrant the installation of an experimental compressor plant for the extraction of gasoline from the gas. At an expense of some $4,000 this was carried out with a plant of a capacity of 20,000 cubic feet per day. Results obtained showed a production varying from 1 to 2 gallons of gasoline per thousand cubic feet, and a plant consisting of eight 80-horsepower compressors, with all its accessories, has been installed with a capacity for handling 4,000,000 cubic feet per day.

"Owing to the peculiar formations encountered, consisting of heaving sands and caving shales, particularly for the first thousand feet, a number of the wells had to be started a second and sometimes a third time. Several of these when abandoned were some hundreds of feet deep with casing in them."

From the various reports submitted it appears that the section 10 contract above referred to required the immediate drilling of a well to be continuously pursued to discovery of oil. The initiative of development work was taken in December of 1908 and January of 1909. Prior to that time there was no development in these hills. Immediate surveys were made; road building was commenced, and some 14 miles constructed; camp buildings were placed on section 10; a water well was put down on the shore of Buena Vista Lake and a system installed to bring water to the main camp on section 10 for distribution to the various tracts to be developed; and the installation of a system for gas and water distribution from section 10 to the various tracts that have been applied for was begun. Drilling had been in progress for some time prior to the first withdrawal of the land in section 10 with the intention of developing a fuel supply, and cabins had been erected on each quarter section claimed, except the south quarters of section 4 and the north quarters of section 14, it being the intention of the applicant to conduct operations on these tracts from the main camp on section 10. All these improvements had been made prior to the first withdrawal of the land on September 27, 1909, and from the evidence submitted it appears that at the time of said withdrawal and to date of discovery the applicant was diligently engaged in development work such as extending, oiling, and making necessary improvements of the road system, constructing and extending the water and fuel systems, the telephone lines, the securing and hauling of material, and the installment of necessary rigs, buildings, engines, boilers, tools, machinery, casing, and other equipment necessary for use in the development of these lands as a unit.

On none of the claims did actual drilling begin until after the land had been withdrawn. The question then arises as to whether any part of this general work designed to be applied to the development of the field as a whole, coupled with the particular facts surrounding the development of each claim, is of such character and continuity as will bring each or any of these claims within the protecting proviso to section 2 of the withdrawal act of June 25, 1910 (36 Stat., 847), which is as follows:

"That the rights of any person who, at the date of any order of withdrawal heretofore or hereafter made, is a bona fide occupant or claimant of oil or gas bearing lands and who, at such date, is in diligent prosecution of work leading to the discovery of oil or gas, shall not be affected or impaired by such order so long as such occupant or claimant shall continue in diligent prosecution of said work."

Before determining this question, however, it is deemed advisable first to summarize the specific facts with respect to each claim.

03495—N. ½ Sec. 14.

February, 1909.—Preliminary roads had been graded to drilling locations on each quarter section. Necessary work in the repair, improvement, and oiling of these roads for heavy use to which they were constantly put was kept up practically continuously for two years thereafter before the road system, used continuously in the development of these particular claims, was completed, and this system has ever since been maintained and used for the purpose of all the claims in section 14. The lumber work of one rig on each quarter section has been completed. A 2-inch water pipe had been laid from the only available water supply, a well in section 1, to a storage tank on section 10, a distance of some 18,000 feet, and 410 feet elevation, and pump and gasoline engine were installed in a building erected for the purpose.

August, 1909.—Orders were placed for a quantity of 2-inch line pipe for use in extending the water and a gas fuel system to section 14 and elsewhere, rig irons, a 45-horsepower boiler and fittings, two 125-barrel water tanks, brick, cement, pipe fittings, valves, steam pump, all to be used in connection with the extension of water and gas fuel systems to the several claims on section 14 and other sections. Surveys were made and pipe line installed from central plant on section 10 to all claims on section 14. A steam pump was installed near the storage tank on section 10 and connected into this line for making delivery of water to section 14 and beyond, which area is considerably higher in altitude.

September, 1909.—For the storage of fuel oil and water at the various drilling locations tanks were purchased and immediately upon delivery were hauled out and duly installed on suitable graded foundations on the north half section

14 as well as other drilling locations. Then followed the rebuilding and strengthening of the rigs, the lighter lumber of the upper parts having checked and warped under the intense summer heat to a degree to render them unfit for the heavy work found to be necessary in this field. The central pumping plant had burned in July and the work of rebuilding and the reestablishing the general water system was accomplished this month.

October, 1909, to February, 1910.—Boilers for each drilling rig were purchased and duly installed with brick settings and connected up with the feed and fuel pumps, and in October and November of 1909, each rig was equipped with the necessary drilling, casing, sand lines, etc., and the work of rigging up the derricks was proceeded with. In November and December of 1909, drilling engines were purchased and installed and connected up to the boilers. At this point, it appears, on the advice of Mr. John A. Pollard, an expert on rotary work, who had been employed by the applicant to solve the high-gas pressure problem encountered on section 10, it was determined to bore the first well on section 14 with a rotary drill, and orders were placed for a rotary gear in Texas, but, without waiting for this shipment, parts of a rotary equipment were borrowed from different quarters, and a complete rig was made up and installed on the derrick on the NW. ¼ sec. 14, and drilling commenced on February 14, 1910. On the arrival of the Texas rotary gear, it was installed in the derrick on the NE. ¼ sec. 14 before the end of March, 1910. Actual drilling on this quarter was not begun at that time for the reason, as stated in the reports, that the water system that had been installed was found to be insufficient to keep more than three wells drilling at a time, and drilling operations were already in operations on the SE. ¼ sec. 4, NW. ¼ sec. 14, and SW. ¼ sec. 24. A supply of 4-inch line pipe was accordingly purchased and laid, and a 40-horsepower gas engine was installed by April 16, 1910. At this time the well on the NW. ¼ of sec. 14 had reached a depth of 1,400 feet.

Fuel oil for the three drilling rigs in operation were being hauled from Maricopa at a cost of $1.70 a barrel, the light gravity oil found on section 10 being unsuitable for the purpose. The question arose as to whether it would be better business to increase the number of tank wagons for the transportation of this expensive fuel, which equipment would become useless in a few days, or to push the drilling on the NW. ¼ to another 200 feet, at which depth it was believed the gas stratum would be reached. The latter was adopted. The drilling on the NW. ¼ sec. 14 was accordingly continued and finished to gas which was connected up to the boilers of the drilling rig on the NE. ¼ sec. 14 by May 16, 1910, and actual drilling begun on this quarter May 17, 1910. During the period from April 16, 1910, to May 16, 1910, road work and pipe-line work indispensable to the development of all the N. ½ sec. 14 was continued. After drilling commenced on the NW. ¼ and the NE. ¼ sec. 14, it was kept up continuously until discovery of gas and oil, on the former at 1,604 feet in April, 1910, and on the latter at 3,010 feet in January, 1911.

05128—SE. ¼ Sec. 4.

The general work of building and maintenance of roads, the installation and extensions of the water and fuel systems, and the establishment of the necessary buildings, shops and warehouses at the general camp are shown to be applicable also to this claim.

Prior to the withdrawal of September 27, 1909, a complete drilling rig had been erected. During the time from the reestablishment of the water system to the date of actual drilling in the last days of February, 1910, a water line was laid from the central plant on section 10 to this section 4, the boiler and engine for use on this quarter were being installed, and the necessary rigging, casing, tools, etc., were ordered and hauled to the premises for use in connection therewith. Further road work was done on sections 4 and 8. A cookhouse and camp was also constructed for use in the development of the section 4 claims. A foundation had also been laid and a 5,000-barrel steel tank for water to be used in the development of sections 4, 6, and 8 was under construction. After drilling was commenced on this tract, work was continuous until both oil and gas were discovered at 2,250 feet in May, 1910.

05134—NW. ¼ Sec. 12.

The same general development work and improvements applied to the preceding claims appear to be equally applicable to this one.

Upon reaching gas on the NW. ¼ sec. 14, branch gas lines were extended to the other drilling locations, including the NW. ¼ sec. 12. In December of 1909, the heavy timbers of a derrick were put in place on this claim. This was completed and boiler set in the early days of March, 1910, and a camp consisting of a cookhouse, bunk house, and tool house was erected on the section for use in the development of its four quarters. The water system had also been extended to this quarter. Some two or three miles of road additional was constructed for use in connection with the development of section 12, and about the 1st of May the rig on this quarter was fitted up with a rotary drilling gear. Drilling began in May, 1910, and under great difficulties, in which months were spent in fishing jobs, was continued diligently until discovery of oil was made the following April.

05125—NW. ¼ Sec. 8.

The same general work and improvements applied to the preceding claims appear equally applicable to this claim.

From the evidence submitted it appears that work on the construction of the derrick erected on this quarter was begun in December of 1909 and was completed and the derrick rigged up in February of 1910. A small cookhouse also had been built and some additional road constructed, the water pipe line extended from the steel tank on section 4, and a gas line laid from the NW. ¼ sec. 14, at the time drilling started in May, 1910. This work was diligently prosecuted until discovery was made. Heavy gas was encountered at 2,190 feet March 20, 1911, and after great difficulty, due to excessive gas pressure, the well was completed in the oil measure at 2,648 on October 1, 1911.

05124—SW. ¼ Sec. 4.

The general development work and improvements applied in the foregoing cases appear to be equally applicable to this claim. One of the first five rigs erected on the Honolulu property was placed on this tract in February of 1909. This rig was equipped with boiler and engine in February, 1910, and a 5,000-barrel water tank for use in connection with sections 4, 6, and 8 was erected on this subdivision. A cookhouse and camp was also constructed on this section, and additional roads were laid out and graded for use on this and adjoining claims. Drilling began about August 23, 1910, and was diligently prosecuted to discovery of gas at 2,243 feet on May 16, 1911. Oil was reached at 2,400 feet on June 26, 1911. Extreme difficulties had been experienced on this well by reason of the excessive gas pressure encountered, and it was not until January, 1912, that the well was put on a producing basis at a depth of 2,640 feet.

05133—SE. ¼ Sec. 14.

The general development work hereinbefore described as applied to the common development of the Honolulu Co. claims appears equally applicable to this one. A rig had been erected on the SE. ¼ sec. 14, and a water pipe line had been laid from the distributing station on section 10 to this claim in August of 1909. Between the dates of September 27, 1909, and July 2, 1910, about two miles of additional road work was done on section 14 in furtherance of the general development scheme adopted by the claimant. There was also a camp established on this section and a 5,000-barrel water tank erected and connected with the water-distributing system for use on all the claims in sections 12, 14, 24, and 26, and the gas fuel system was carried across section 14 and this tract to section 24, and in July, 1910, the boiler and engine for drilling on this claim were placed. Drilling began July 11, 1910, and was carried to a depth of 580 feet, at which point it was found necessary to abandon this well, as it had been drilled so crooked that the casing stuck and had been twice parted in trying to loosen it. The 12½-inch casing was finally recovered, but the larger stove-pipe casing was left in the ground. It was decided to start a new well near the center of the section, but as it had become evident that the supply of water then developed was insufficient to run more than the 10 rotary and the 8 cable rigs then in operation drilling could not be resumed until some other well had been completed and its water supply diverted. A new rig was accordingly built in May, 1911, near the center of the section, and a new well was spudded in on June 29, 1911. Drilling was carried on continuously until July 10, when on account of further casing troubles it was found necessary to move the rig to another point. This accomplished, the third well on this quarter which was begun by the rotary method on October 26, 1911, and drilling was continuously prosecuted until the larger oil measures were reached, and the well finished at 3,215 feet on October 26, 1912. Gas measures at 1,690 to 1,700 feet were passed in February, 1912, and some smaller oil measures penetrated in September, 1912.

05127—SW. ¼ Sec. 8.

This claim is one of the several in which the general development work hereinbefore described is equally applicable. In May, 1910, the water-distributing system from section 10 and gas-fuel system from section 14 had been brought to this section for use in connection with the development of this claim. The camp buildings and additional road work placed on section 8 also served in the development of this quarter. The foundation and heavy timbers of the drilling rig ordered in September, 1909, were placed on this quarter in December of 1909 and January of 1910. The rig was completed in June of 1910, and in July of 1910 the well was spudded in. Drilling continued by the cable method until September 12, 1910, when the depth of 690 feet was reached. Before proceeding further with either the circulator or rotary methods adopted it was necessary to have a greater supply of water than was available, as the 10 other wells being drilled exhausted the supply then available. As soon as some of the other wells had been completed or changed to cable, a rotary gear was installed and in December of 1910 drilling was resumed and continued, and after many vicissitudes the oil measures were penetrated at 2,640 feet on February 1, 1912.

05128—SW. ¼ Sec. 12.

The general work applied to the development of the other claims in the applicant's holdings is equally applicable to this claim. In December of 1909, the foundation and heavy timbers of a derrick were put in place on this claim. Between September, 1909, and July, 1910, some 5 miles of additional roads were graded and put into condition for the heavy work incident to the development of sections 12 and 14. In March, 1910, a camp consisting of a cook house, bank house, tool house, etc., was constructed on this quarter. Boiler and engine were installed, the derrick was completed and equipped with tools, and in September of 1910 the well was spudded in and carried on continuously with 16-inch stovepipe casing to a depth of 445 feet, when it was found impossible to carry the stovepipe casing farther and it was necessary to proceed by the rotary or the circulating method. There being already 10 wells in operation insufficient water was available to continue by either of these methods. Work on this well was resumed in May, 1911, when it was found that the hole was crooked. The casing was then removed and a new well was started on July 14, 1911. Work on this well proceeded continuously until gas was discovered at 2,940 feet in October, 1912. The well was finished in the oil measures at 3,226 feet in November, 1912.

05129—SE. ¼ Sec. 8.

The general work of construction and maintenance of roads, installation, extension, and maintenance of the water and gas-fuel system, construction and maintenance of the general camp and machine shops and warehouses as well as the building and equipment of the special camp on section 8 for common use in connection with the claims on this section and applied to other claims in the general scheme of development of this property, are equally applicable to this claim. It is not clear from the report when the first rig on this quarter was installed, but inasmuch as it is stated by the applicant that it was one of those ordered on September 14, 1909, it was doubtless installed sometime in the following December. The drilling history furnished in connection with this claim shows that actual drilling commenced on this quarter on October 30, 1910, and was carried on, as in practically all the other cases where drilling began before the water system had been perfected to a degree to have wells in progress on every claim on the property, by the cable method, and was carried to a depth of 500 fet with 16-inch stovepipe casing. At that point it was found impossible to carry the stovepipe casing to a greater depth, and necessary to proceed by either the rotary method or by the cable method with circulator system either of which would require more water than was at that time available. Drilling was accordingly suspended temporarily to await the necessary extension of the water system or until some other well should be completed and water available. When the gas well on the SE. ¼ sec. 4 came in, gas was piped from it to this section and quarter. An additional 4-inch water pipe line was installed from the pumping plant to the central distributing tanks in section 10, and drilling on this quarter was resumed by the cable method wth circulator system on August 1, 1911. During the period drilling was thus suspended the derrick was rebuilt and circulator system installed. This system required the installation of high-pressure mud pumps and equipment, the building of mud boxes and flumes, and the addition of a second boiler. Drilling continued. Gas was encountered on March 5, 1912. After a series of gas troubles the well was finished in the oil measures at 2,540 feet in December of 1912.

05130—SW. ¼, Sec. 14.

The general work accredited to the development of the N. ½ of this section and described to considerable extent under 03495 of this letter appears to be equally applicable to this claim. In July, 1910, a rig was erected on this quarter section. This rig was equipped with boiler, engine, and the necessary tools and casing, and drilling began in the early part of September of 1910. The drilling history furnished the special agent shows that the work of drilling was carried on continuously with 16-inch stovepipe casing to a depth of 480 feet, reached October 1, 1910. This was as far as could be reached without the rotary method or the cable method with circulator system. At this time there were 11 other wells drilling by these methods and 2 by the cable method, and the available water supply was insufficient to permit the use of either the rotary or circulator system for additional wells. This necessitated stopping the drill until water should be available. The completion of another well in May, 1911, rendered it possible to resume work on this well. In the meantime the derrick had been repaired and braced and the circulator system installed, consisting of high-pressure mud pumps and equipment, mud boxes, flumes, etc., including an extra boiler; work on this well was resumed in May of 1911. It was found that the hole was crooked and the derrick was moved and a new hole started and continued to discovery of gas on March 5, 1912. The well was finished a few days later in the oil measures at 3,160 feet.

05132—NE. ¼, Sec. 4.

The general work accredited to the development of the applicant's holdings in this vicinity, including the camp constructed in this section, appears to be equally applicable to this claim. About one mile and a half of additional road was constructed on section 4 for common use in the development of the claims on that section between the dates of September 27, 1909, and July 2, 1910. One of the rig foundations ordered prior to the first withdrawal is reported to have been placed on this quarter, and the heavy timbers of the derrick were erected in December of 1909. The camp on section 4 was built in February of 1910, and a 5,000-barrel tank was erected there for use in connection with the water-distributing system that had been installed. During this month the additional roads on section 4 were graded and put in condition for heavy team work to this location. Actual drilling began on this claim in September of 1910 and was carried on continuously to a depth of 392 feet, when it was found impossible to carry the 16-inch stovepipe casing to a greater depth, and drilling could not proceed further without the rotary or circulator systems. There were at this time 10 other wells being drilled by the rotary and three by the cable method which required all the supply of water then available. There was also a lack of gas pressure on the fuel line, due to line friction and the use by other wells drilling at the west end of the property, and it was found to be necessary to suspend drilling until a full supply of both gas and water was available. In March of 1911 a gas well was completed on the SE. ¼, Sec. 4, and was connected up with the fuel line leading to this claim. An additional 4-inch water line was laid from the lake pumping plant. The derrick was repaired and the circulator system installed by July of 1911. At this point the log of a well that had been drilled to a depth of 3,000 feet on Sec. 31, T. 31 S., R. 24 E., about a half mile east and a little north of this well was secured. This log showed indications that the formation pitched rapidly, and after considerable geologic investigation it was concluded that only near the center of the section could it be expected to find the oil measures at a reasonable depth. Grading for a new derrick was accordingly begun in December of 1911, and a derrick of combination type was built and rigged up in January and February of 1912. Actual drilling began here by the circulator system on March 1, 1912, and was continued to oil discovery on February 16, 1913. Gas showed on March 1, 1913. The well was later sunk to a depth of 3,320 feet, when it began to flow salt water, which afterwards was plugged off by cement.

05252.—NE. ¼ Sec. 8.

The general work performed in connection with the development of the entire holdings of the applicant company and hereinbefore described to some length under 03495, appears equally applicable to this claim. From the evidence submitted it appears that one of the rig foundations and the heavy timbers of the derrick ordered prior to the first withdrawal were hauled to this claim in December of 1909 and put in place. The water and gas fuel distributing system was extended to this land and a camp for use in the development of all the claims on section 8 was built, and in May and June of 1910 the rig was completed and equipped. Actual drilling commenced in September, 1910, and was carried on continuously by the cable method until October 24, 1910, with stovepipe casing, on which date a depth of 480 feet had been reached. Drilling could not be carried to a greater depth without using the rotary or the circulator method, and as there were already 10 wells being drilled by rotary and four others using cables there was not a sufficient water supply to start more wells until the deficiency could be supplied. There was also a lack of gas pressure on the fuel line, and it was necessary to stop drilling until a supply of fuel gas was available. These deficiencies being supplied, drilling was resumed early in May of 1911. During the time actual drilling was suspended the derrick was repaired and the circulator system installed, consisting of high-pressure mud pumps, mud boxes, and flumes and an extra boiler. On July 28 heavy gas was struck which blew the tools and a part of the 12½-inch casing out of the well. The gas caught fire and burned for 20 hours, consuming the derrick and everything near the well, and leaving a crater some 40 feet deep and 25 feet in diameter.

From the foregoing it is observed that actual drilling did not commence on any one of these claims until after withdrawal of the land on September 27, 1909, and that periods of several months elapsed with no work leading to the discovery of oil or gas being done or improvements made within the boundaries of some of them. It is quite clear that each of these applications must fail if considered alone without allowance of credit for any of the general preliminary work and common improvements begun prior to the withdrawal and claimed to have been so designed and prosecuted as to except the claims involved from its force and effect. A considerable part of this general work and many of the improvements used in the scheme of common development were placed on lands not covered by the claims—lands that had been previously patented. The following questions then arise:

1. Is preliminary work performed outside the boundaries of a claim (such as building roads and pipe lines, the installation of machinery, etc.) under any circumstances "work leading to the discovery of oil or gas" within the meaning of the proviso to the act of June 25, 1910?

2. May such work and improvements be in the nature of a common improvement for the benefit of several claims?

Just what is admissible as work leading to the discovery of oil or gas within the meaning of this act is an open question and one on which there has been a wide divergence of opinion. It has been contended, though not in this case, that efforts looking to the financing of a scheme to develop an oil property should be placed in this category, while on the other hand the other extreme has been advanced that nothing short of actual drilling on the land should be admitted. After a careful consideration of this question I am of the opinion that, in proper cases, work and development relating to the land itself and the installation of equipment necessary to its physical development looking to oil or gas production, may be classed as work leading to discovery. If, when viewed from a practical business standpoint and in accordance with good, approved practice, the preliminary work of building and maintaining roads, the development of water and fuel systems, the installation of machinery, and the construction and equipping of camps are necessary to the work of discovery or essential as an economic business proposition, then, in my judgment, such work and improvements may properly be recognized as work leading to discovery within the meaning and contemplation of the act, provided it is clearly apparent from all the facts that such work and development are designed and intended to develop the particular claim in question.

Furthermore, I am unable to see any good and sufficient reason why such work and improvements not within the boundaries of a particular claim may not, in proper cases and within certain limitations, be equally considered as work leading to discovery, where such work and improvements are designed and adapted for a unit development of several claims under a common and connected system. Therefore I am of the opinion that "work leading to the discovery of oil or gas" may consist of labor and improvement actually performed and used in the common development of several mining claims, provided it is clearly shown that there exists a common ownership, that the work is of such a character as to be clearly adapted to and intended for a unit development, that the inclusion of each particular claim composing such unit is clearly apparent from the physical facts on the ground, and that the nature of the common development is consistent and its extent commensurate with the character and area of the group of claims proposed to be developed as a unit.

These questions having been answered in the affirmative the third question arises.

3. What shall be the extent and continuity of operations to constitute diligence within the meaning of the act and the decisions of the department and the courts generally?

As a general proposition what constitutes diligence must depend upon the facts in each particular case. Manifestly in an enterprise beset with many unknown conditions due regard must be given to those unavoidable delays which arise out of the contingencies of the development work itself, provided due diligence is found to exist in meeting new conditions as they arise, and all the facts of the situation indicate that the element of good faith is at all times apparent.

If it be satisfactorily shown that the applicant's efforts have been applied in the manner accepted generally as in accordance with good business practice after all the conditions have been considered, one act following another in logical and orderly sequence, as dictated by experience and reasonable judgment, with the object of reaching and discovering the oil or gas measures lying within his claim or group of claims, I believe he should be credited with due diligence and with having met the requirements of the act in this respect, provided at the date of withdrawal, and continuously thereafter to discovery on each particular claim, either (*a*) such common development and improvement leading to discovery as may be properly and directly credited in part to each particular claim, pursuant to the principles above discussed, or (*b*) development and improvement work leading to discovery on the particular claim itself, are continued diligently and without interruption, on a scale commensurate with the extent of the unit development contemplated and in accordance with good economic practice, the required continuity of such common or particular development and improvement to be ascertained from the work and improvements actually done and made on the ground. It does not follow from the above, however, that a mere progressive development of a series of claims one after another where the claims of the series last developed are not directly and necessarily dependent on the prior development of other claims in the group would constitute diligence within the meaning of the act so as to offset the effect of an intervening withdrawal.

From a careful analysis of all the facts disclosed by the investigation and appearing in the record as herein summarized, I conclude that in the case of the group development here under consideration, work leading to the discovery of oil or gas was commenced on or for the benefit of each and every of these claims prior to September 27, 1909, the date of the first withdrawal, and that such work and improvement was continued diligently to discovery on each of said claims in accordance with the principles, requirements, and limitations above defined. In this view of the law and the facts it is therefore held that these 12 mineral entries are covered by the proviso to the act of June 25, 1910, and same will be referred to your division for adjudication on the record.

Very respectfully,

Clay Tallman, *Commissioner.*

Senator Walsh. Mr. Chairman, at the outset of these hearings, I called your attention to certain price lists issued by the Carney Coal Co. for coal sold at its mines. I have now these lists, and I desire to submit them in evidence, and I want to invite your attention to them. I have here before me the price list of this company issued May

15, 1916, and I understand that all other companies, operating in the same field, offered practically the same prices. It then offered to sell at its mines screened lump at $1.75 per net ton; screened lump and egg $1.75 per net ton; screened egg $1.50 per net ton; screened nut $1.25 per net ton, and so on down the list. The price for screened lump will be sufficiently illustrative. That was on May 15, 1916, 13 months ago. On August 15, 1916, it put out the following schedule: Screened lump $2 per net ton; screened lump and egg $2 per net ton, etc.; $2 being then the basis. On May 15, they put out the following schedule: Screened lump, $3 per net ton; screened lump and egg, $3 per net ton; screened egg, $3 per net ton, etc.

Now, on June 7, 1917, it put out a circular to the effect that, after June 15, its prices would be as follows: Screened lump $3.50; screned lump and egg, $3.50 per ton, etc.; the basic price being $3.50, the price having jumped from May 15, 1916, at $1.75 a ton to $3.50 per ton, a 100 per cent increase in one year. I also submit the following letter:

Mr. F. B. CONNELLY,
Billings, Mont.——

Senator KENDRICK. I wish to say that this mine is right in my home community and I want to make this statement: That those mines, to my certain knowledge, have been operated at practically a loss for three years preceding last fall.

Senator WALSH. I give the information as I get it, Mr. Chairman, that all the other companies operating in the same locality—that is, marketing this coal in the same region—put out prices that are substantially the same as this. I shall resume the reading of the letter:

Mr. F. B. CONNELLY,
Billings, Mont.

DEAR SIR: As a large user of this company's product (heat) this is to notify you that owing to the ever-increasing cost of coal in this territory, we are compelled to increase our heating rates for season 1917 and 1918 from 20 to 25 per cent.

This company consumes from 15,000 to 18,000 tons of 2½-inch screenings during the heating season, and from a comparison of inclosed coal price lists (and the end is not yet, as the coal companies claim there will be another advance in August) you will see the justice of above increase.

Why coal should advance to such heretofore unknown prices is beyond even a good guess other than the greed of the coal operators, as the pay to the miners has not been increased, and the increased cost of materials used in the operation of the mines could not justify the increase in cost of coal to the consumer.

Very truly, yours,

BILLINGS UTILITY Co.,
By C. O. MYERS, *Manager*.

I also wish to read into the record this letter:

Hon. F. B. CONNELLY,
Billings, Mont.

MY DEAR CONNELLY: Referring to yor inquiry as to increased prices in the production of coal in this and the Sheridan field, we would state, upon inquiry, that the last agreement formulated between the operators and miners, effective April 1 and extending to April 1, 1918, is as follows: Loaders in the mines, an increase of 5½ cents per ton, mine run; inside common labor, an increase of 50 cents per day; outside common labor, increase of $10 per month; pick mining, 7 cents per ton, mine run; and machine mining, 6½ cents per ton, mine run.

Trusting that this will give you the information required, we are,

Yours, very truly,

BILLINGS UTILITY Co.,
By C. O. MYERS, *Manager*.

Mr. Chairman, the purpose of this bill is to enable the opening up and utilization of deposits of coal in the public-land States now locked up and unavailable to the consuming public in those regions. I submit another schedule, Mr. Chairman, as follows, to show that there are really no entries of coal lands being made now. The land is either entirely withdrawn from entry, as I shall show you is the case with the enormous acreage, or the purchase price put upon it is so high that nobody, practically speaking, enters any more coal land.

In the State of Montana in the year 1913 there were but 14 entries of coal land, the aggregate being 1,542.04 acres; in 1914 there were only 12 entries, of an aggregate acreage of 581.32; in 1915 there were but 10 entries, of an aggregate acreage of 470.06; and in 1916 there were but 11 entries, of an aggregate acreage of 798.84.

There are in the State of Montana, classified as coal lands, 5,506,779 acres. The same condition prevails throughout the public-land States, as will be seen from the following facts, to which I invite your attention:

In 1913 there were only 76 entries of coal lands made anywhere in the coal-land States, of an aggregate acreage of only 10,378.70; in 1914 those entries dropped to 63, the aggregate acreage being 8,157.45; in 1915 there were 47 entries of coal lands, the aggregate being 6,769.82 acres; and in 1916 there were 38 entries of coal lands, with an aggregate acreage of 3,441.27 acres; so that, Mr. Chairman, it may be stated generally that there is no more cool land being appropriated for want of an appropriate law for the disposition of these lands, and these facts, I think, Mr. Chairman, ought to prompt the committee to act speedily on the bill that is before it.

The **Acting Chairman**. Senator Chamberlain sent a message up to the chairman just a while ago, in which he stated that Mr. Sulzer, a Representative from Alaska, desired to be heard before the committee.

Senator **Walsh**. He has been heard.

The **Acting Chairman**. I presumed he had something additional to say. However, it is possible that Senator Chamberlain did not know he had been heard at the time he sent the message.

Senator **Walsh**. I suggest, in that case, that an open session be held the first thing in the morning to ascertain whether the gentleman desires to be heard, and that after that we go into executive session for the purpose of considering this bill.

The **Acting Chairman**. Very well; an open session will be held in the morning at 10 o'clock, immediately following which we will go into executive session. That will be the order, without objection.

(The papers referred to by Senator Walsh are here printed in full, as follows:)

F. B. Connelly Co.,
Billings, Mont., June 23, 1917.

Hon. T. J. Walsh, *Washington, D. C.*

My Dear Senator: I just returned home a few days ago and found your letter of the 5th.

I should like to have met Mr. Peabody, but I found it was necessary for me to return to Chicago, and I felt that the price lists and the data which I am inclosing, which gives the true situation in the Sheridan, Wyo., coal field, would be sufficient, and all that I could do would be to say that all the people whom I met on my trip as well as here at home are very uneasy regarding the coal situation.

The price lists that I am inclosing are the originals, and I sincerely hope that you can get this matter before the Council of Defense.

Thanking you very kindly for courtesies extended while in your city, which were very much appreciated, I remain,

Yours, very truly,

F. B. CONNELLY.

CARNEY COAL CO., BILLINGS, MONT., PRICE LIST.

BILLINGS UTILITY CO., *Billings, Mont.*

GENTLEMEN: The following prices are effective on and after May 15, 1916, f. o. b. mine:

	Per net ton.		Per net ton.
Screened lump	$1.75	Screened pea	$0.75
Screened lump and egg	1.75	2½-inch nut run	.60
Screened egg	1.50	5-inch engine	1.15
Screened nut	1.25	Pea slack	.40
Screened egg and nut	1.50	Slack	.25
Screened pea and nut	1.00	Mine run	1.35

The following prices are effective on and after August 15, 1916, f. o. b. Alger, Wyo.:

	Per net ton.		Per net ton.
Screened lump	$2.00	2½-inch nut run[1]	$1.00
Screened lump and egg	2.00	5-inch engine	1.15
Screened egg	2.00	Pea slack	.40
Screened nut	1.25	Slack	.25
Screened egg and nut	2.00	Mine run	1.75
Screened pea and nut	1.00	Your rate is	1.00
Screened pea	.75		

The following prices are effective on and after May 15, 1917, f. o. b. mine:

	Per net ton.		Per net ton.
Screened lump	$3.00	Screened pea	$1.50
Screened lump and egg	3.00	2½-inch nut run	2.00
Screened egg	3.00	4 by 5-inch engine	1.75
Screened nut	2.00	Pea slack	1.00
Screened egg and nut	2.50	Slack	.75
Screened pea and nut	1.75	Mine run	2.00

CARNEY COAL CO.,
Carneyville, Wyo., June 7, 1917.

To the trade:

Because of increased costs of material and labor there will be an increase of all coal prices June 15.

There is a tariff published increasing all freight rates 15 per cent. Unless suspended or canceled by the Interstate Commerce Commission this will be effective July 1.

We quote for all coal shipped—

Before June 15, f. o. b. mines:	Per ton.	After June 15, f. o. b. mines:	Per ton.
Screened lump	$3.00	Screened lump	$3.50
Screened lump and egg	3.00	Screened lump and egg	3.50
Screened egg	3.00	Screened egg	3.50
Screened nut	2.00	Screened nut	2.25
Screened egg and nut	2.50	Screened egg and nut	3.00
Screened pea and nut	1.75	Screened pea and nut	2.00
Screened pea	1.50	Screened pea	1.75
2½-inch nut run	2.00	2½-inch nut run	2.00
6-inch engine	1.75	6-inch engine	2.00
Pea slack	1.00	Pea slack	1.25
Slack	.75	Slack	.75
Mine run	2.00	Mine run	2.25

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[1] Oct. 1, 1916, to Apr. 1, 1917, $0.75.

A few box cars are available for loading now and we can take care of a considerable tonnage at this time, and suggest you take on all the coal you can at an early date.

Yours, truly,

C. B. SEYMOUR.

BILLINGS UTILITY CO.,
Billings, Mont., May 21, 1917.

Mr. B. F. CONNELLY,
Billings, Mont.

DEAR SIR: As a large user of this company's product (heat), this is to notify you that, owing to the ever-increasing cost of coal in this territory, we are compelled to increase our heating rates for season 1917 and 1918 from 20 to 25 per cent.

This company consumes from 15,000 to 18,000 tons of 2½-inch screenings during the heating season, and from a comparison of inclosed coal price lists (and the end is not yet, as the coal companies claim there will be another advance in August) you will see the justice of above increase.

Why coal should advance to such heretofore unknown prices is beyond even a good guess, other than the greed of the coal operators, as the pay to the miners has not been increased and the increased cost of materials used in the operation of the mines could not justify the increase in cost of coal to the consumer.

Very truly, yours,

BILLINGS UTILITY CO.,
By C. O. MYERS, *Manager.*

BILLINGS UTILITY CO.,
Billings, Mont., June 23, 1917.

Hon. F. B. CONNELLY,
Billings, Mont.

MY DEAR CONNELLY: Referring to your inquiry as to increased prices in the production of coal in this and the Sheridan field, we would state upon inquiry that the last agreement formulated between the operators and miners, effective April 1 and extending to April 1, 1918, is as follows: Loaders in the mines, an increase of 5¼ cents per ton, mine run; inside common labor, an increase of 50 cents per day; outside common labor, increase $10 per month; pick mining, 7 cents per ton, mine run; and machine mining, 6¼ cents per ton, mine run.

Trusting that this will give you the information required, we are,

Yours, very truly,

BILLINGS UTILITY CO.,
By C. O. MYERS, *Manager.*

Entries of coal lands in Montana.

Year.	Number.	Area.	Purchase price.	Average per acre.
1913	14	1542.04	$32,145.20	$20.85
1914	12	581.32	9,826.40	16.90
1915	10	470.06	9,601.60	20.42
1916	11	798.84	12,793.60	16.01

Total number of acres classified as coal, 5,506,779.

Total number of acres outstanding withdrawn to June 26, 1917, not classified, 11,877,349.

Entries of coal lands in United States.

Year.	Number.	Area.	Purchase price.
1913	76	10,338.70	$270,426.10
1914	63	8,157.45	208,201.60
1915	47	6,709.82	230,516.83
1916	38	8,441.27	118,136.66

Number of acres withdrawn for oil.

	Acres.
Naval reserve No. 1	77, 734. 38
Naval reserve No. 2	
Naval reserve No. 3	
Withdrawn in other parts of United States exclusive of Alaska	6, 376, 701. 62
Total withdrawn	6, 454, 436. 00

Oil shales.

	Acres.
Colorado	45, 440
Utah	86, 584
Total	132, 024

The CHAIRMAN. If there is nothing further now, the committee will adjourn to meet to-morrow morning at 10 o'clock.

(Whereupon the committee adjourned to meet Thursday, June 28, 1917, at 10 o'clock a. m.)

LEASING OF OIL LANDS.

THURSDAY, JUNE 28, 1917.

United States Senate,
Committee on Public Lands,
Washington, D. C.

The committee met, pursuant to adjournment, at 10.30 o'clock a. m., in the committee room, Capitol, Senator Key Pittman presiding.

Present: Senators Pittman (acting chairman), Phelan, Husting, Shafroth, Kendrick, Smoot, Norris, Sterling, and McNary.

The committee resumed the consideration of the bill S. 45, "A bill to encourage and promote the mining of coal, phosphate, oil, gas, potassium, and sodium on the public domain."

The Acting Chairman. The committee will come to order. Mr. Sulzer, do you wish to be heard this morning?

Mr. Sulzer. Yes, sir.

STATEMENT OF HON. CHARLES A. SULZER, DELEGATE FROM ALASKA.

Mr. Sulzer. Mr. Chairman and Senators, I would like to take up a few moments of your time with the further consideration of our Alaskan situation. The situation in Alaska at this time and for years has been very distressing. We have been very greatly handicapped in the development of the Territory and in the promotion of our industrial and commercial life. This condition has been chiefly attributed to the fact that we have had no fuel supply.

During the past 20 years the population of Alaska has remained practically stationary. There are no more people in Alaska to-day than there were 20 years ago. The development of the Territory has not been what it should have been.

Mr. Chairman, these conditions are generally attributed to the conservation policy of the Government. It is due to the fact that the coal and oil lands have all been withheld from development, and it has been impossible to proceed in a proper manner without the necessary fuel supply.

In connection with that I think that there has been a general misunderstanding all around regarding the Alaskan situation and Alaskan conditions. I might say that Mr. Pinchot called upon me several days ago and talked this situation over with me. He stated that he felt that what the people of Alaska were asking for at this time in connection with the coal and oil lands was perfectly fair and just, and that for his part he would like very much to see these provisions which I have talked over with you before placed in the bill.

The amendment which the people of Alaska would like to see in this bill in regard to the oil lands is the amendment which I submitted the last time I appeared before the committee, which has been printed on page 44 of these hearings and which gives a preferential right to those who have located oil claims in Alaska and who may not be able to obtain patent to them. It gives them a preferential right in that case to a lease under the law.

We would like, also, to have inserted in the bill an amendment amending section 30 by adding thereto the following proviso:

> *Provided*, That any bona fide locator or claimant of oil or gas lands in Alaska who initiated his claim by taking possession, marking the boundaries, and recording a notice of location thereof previous to any order of withdrawal of such lands and in accordance with the law at the time and has maintained possession thereof and has performed annual labor and done development work to the aggregate value of $500 for each claim and has not abandoned the same, such locator or claimant or his successor in interest shall be entitled to proceed with development work and perfect title to such claim under the provisions of the law in effect at the time of its initiation.

The reasons for this amendment, Mr. Chairman, are that several hundred thousand dollars have been expended on development work on these oil claims in Alaska. A large part of this expenditure was necessary as preliminary work, such as building houses, landings and docks, clearing land, building wagon roads and rail trams for moving heavy machinery over swampy areas, surveying claims (Alaskan lands being unsurveyed), and other work, all of which was necessary before drilling could begin.

I want to say, Mr. Chairman, that conditions in Alaska are quite different from what they are in other parts of the United States. There is no base to work from in these Alaskan oil fields. The people who go there with the idea of opening them and developing them have to begin at the grass roots; they have got to establish a base; they have got to go up in that country and create everything from the very foundation. They can not get off of a railroad train at a station or use an automobile; they have very poor mail facilities; and the handicaps of conducting business are very much greater than they are throughout the States.

Now, while this work was progressing the withdrawal order of November 3, 1910, was issued, withdrawing all oil lands in Alaska from entry. This had the effect of discouraging further oil development in that territory. Many of the claimants became bankrupt and many claims were abandoned. However, there were others who held on and who prosecuted some work each season. Of the claims occupied and held at that time only a few had been drilled. Only one oil claim has been patented in the whole Territory. Six small wells on this claim produce some 30 barrels per day, which is being refined and sold locally. There is an urgent demand for ten times this production. It can be produced immediately to supply the very urgent need existing there at this time if the provisions of this amendment are inserted in the law.

Senator STERLING. What is the date of the withdrawal order?

Mr. SULZER. November 3, 1910.

These people were working and acting in good faith. There has been no charge against them of any kind. They have been within the law, and they felt if they held onto those claims they would eventually get a patent.

Senator NORRIS. What effect does this withdrawal order have on those who already initiated claims?

Senator SMOOT. Will you pardon me just a moment, Senator? I have been compelled to be at the Finance Committee in connection with the revenue bill or I should have been here. I understand you have this leasing bill up at this time. Senator Shafroth handed me a memorandum in connection with an amendment proposed and asked me to give it consideration.

I feel this way about this matter: Under present circumstances, if the amendment suggested by Senator Shafroth should be adopted by the committee, I would have no serious objection to having the bill reported, but I want it distinctly understood that it is not to be perfunctorily adopted for the purpose of getting the bill through the Senate and into conference, and when it gets into conference that it shall be changed and the amendment stricken from the bill. It is hard to beat a conference report, particularly if it is added to this food-control bill. I want Senator Shafroth to vote for me for this amendment. I do not know how far the committee has gone in connection with the amendment.

The ACTING CHAIRMAN. We have not voted upon it.

Senator SMOOT. I wanted the committee to know how I felt about it. While I am not entirely satisfied with the bill as it would be, I do believe that perhaps it will be the best policy at this time, considering the condition of the country, to accept that legislation. As I stated before, however, I want it distinctly understood now that I do not believe in putting an amendment on as a makeshift, and that that shall go out of conference in the event that somebody demands that it go out. In other words, I would like to see the Public Lands Committee stand by its action and stand by the Senate's action, if you accept this amendment.

The ACTING CHAIRMAN. It is possible that I would be one of the members of the conference committee. Although Senator Smith is on the committee, he is not taking particular interest in it. As one of the possible conferees, and as an individual, I want it understood that I would certainly insist on the amendment staying in, if it goes to the other committee.

Senator SMOOT. It will go to the other committee. That is why I was worried about it, because a conference of the House and Senate will not be composed of members of the committee. They will not be western men; they will be men who have not studied the land laws at law, perhaps; they are not interested in the question, and there is the danger.

I think myself that if it goes through Congress at this session it will have to go upon the food bill, as suggested by Senator Walsh. It is for that reason that I want it distinctly understood that my position, and I hope the position of the members of the Public Lands Committee, will be that whatever the Senate agrees upon, if it goes with the food bill, it shall be that particular bill and not one rewritten afterwards by conferees not members of this committee.

I will say to the Senator that if it was this committee, more than likely I would be one of the conferees and we would know the subject from beginning to end; but we are now asked to put it upon a bill the conferees in connection with which, if it passes both Houses, will, as I stated before, not be particularly interested in this question. They may be men who have never heard the question discussed as all the members of the committees of the Senate and House have.

You will have to excuse me now. We are voting on some very, very important matters at this time. I would like Senator Shafroth to vote for me.

Senator PHELAN. Is there anything in the rules to prevent an addition to the conferees?

Senator SMOOT. Do you mean with regard to the agricultural bill?

Senator PHELAN. No; not exactly.

Senator SMOOT. I have never known it to be done. The Committee on Agriculture will have it in hand.

Senator PHELAN. It is within the rules, however, to increase the number of conferees?

Senator SMOOT. I have never seen it done.

Senator PHELAN. The solution of the problem, it seems to me, would be to have the members of the Public Lands Committee advise in regard to the lands.

Senator SMOOT. I have never seen it done.

You will have to excuse me. I am sorry that I can not be with you.

Mr. SULZER. Replying to the question which was asked awhile ago, I would state that it was impossible for these people to proceed because they had no assurance they could get title to the land if they produced any oil and attempted to market it. If they did that, they would be subject to prosecution. It was simply impossible to undertake any development except simple assessment work, thus holding the claims under the law.

Senator NORRIS. I get these various withdrawal orders mixed up. I do not identify this particular one by this date. There have been a number of them issued. As I understand it, this order did not interfere with men who were on the land complying with the law as it existed at the time. Under the law they could go ahead and complete title, just the same as though the withdrawal order had not been issued?

Mr. SULZER. That seems not to be the case.

Senator WALSH. I think the amendment you propose, Mr. Sulzer, is practically what the law is to-day. This is the law:

"That the rights of any person who, at the date of any order of withdrawal, heretofore or hereafter made, is a bona fide occupant or claimant of oil or gas bearing land, and who, at such date, is in diligent prosecution of work leading to the discovery of oil or gas, shall not be affected or impaired by such order, so long as such occupant or claimant shall continue in diligent prosecution of said work."

Why are not your people protected by that law?

Senator PHELAN. Actually at work on the date of the withdrawal?

Mr. SULZER. Yes, sir.

Senator SHAFROTH. They could make application for patent.

Mr. SULZER. I believe so.

Senator SHAFROTH. They have done $500 worth of work.

Mr. Sulzer. Yes, sir.

Senator Shafroth. And made application to the Interior Department?

Mr. Sulzer. No, sir.

Senator Phelan. Have you been advised that the law does not protect them?

Mr. Sulzer. Yes, sir.

Senator Phelan. By competent lawyers?

Mr. Sulzer. Yes, sir.

Senator Phelan. There is no use discussing the question if Senator Walsh is right about it.

Senator Walsh. When the Congressman read the language it seemed to be that of the existing statute. Will you read it again, Mr. Sulzer?

Mr. Sulzer. Yes, sir. [Reading:]

> *Provided*, That any bona fide locator or claimant of oil or gas lands in Alaska who initiated his claim by taking possession, marking the boundaries, and recording a notice of location thereof previous to any order of withdrawal of such land and in accordance with the law at the time and has maintained possession thereof, and has performed annual labor and done development work to the aggregate value of $500 for each claim and has not abandoned the same, such locator or claimant or his successor in interest shall be entitled to proceed with development work and perfect title to such claim under the provisions of the law in effect at the time of its initiation.

Senator Walsh. Let me point out where I think the difference is. This law contemplates the case of one who is in diligent prosecution of the work at the time of the withdrawal order. The amendment proposes to protect the man who has done $100 worth of work.

Mr. Sulzer. Yes, sir.

Senator Walsh. That is the only difference between the two.

Senator Phelan. $500.

Senator Walsh. $100 worth of work each year. That is to say, the Congressman's amendment says, in effect, that the man who has done $100 worth of work a year has been in diligent prosecution of the work, as contemplated by the statute. That is the only difference between the two. It does not seem to me that there can be many cases——

Senator Phelan. If the Pickett law had been drafted in that language, it would have saved a great deal of trouble, would it not, Senator Walsh?

Senator Shafroth. He does not say $100 worth of work each year. He says, "Has performed annual labor and done development work to the aggregate value of $500 for each claim."

Senator Walsh. The annual labor is $100.

I do not think so, Senator Phelan. As I understand it, the chief controversy is as to work of a certain character; that is, the building of roads, bringing in water, and work on one claim—whether it will avail.

Senator Phelan. I suggest to the Delegate from Alaska that he find out just what diligent work may mean in this particular connection.

Mr. Sulzer. I know that those people have been unable to make any progress or get anywhere under the withdrawal order. It is possible that it may have been interpreted to the effect that they must have been in diligent prosecution of work upon all of the claims on the date that the order was made.

Senator **Norris**. I think there was such a contention made before the committee and that there was that interpretation put upon it. Was not that the contention made by the oil men? Was it not the contention that the department held they had to be at actual work upon the claim upon the particular date that the withdrawal order took effect?

Senator **Phelan**. I think that is the way the law was interpreted.

Senator **Norris**. Do you remember whether that is the way it was?

Senator **Walsh**. I do not think that has ever been held anywhere that they must have been working on the particular day. It has been so stated, but I have never seen any decision to that effect.

The **Acting Chairman**. The Department of Justice or representatives of the Department of Justice have urged that, but the court has not sustained it.

Senator **Shafroth**. I have heard it was the rule, but I have never seen the rule.

Senator **Norris**. I do not understand why these men in this particular case could not get relief under existing law.

Senator **Walsh**. I am sure Mr. Joslin, who is here and who has given the subject a good deal of attention, can explain to the committee where the difficulty lies.

Senator **Phelan**. I recollect a case where a man had apparently abandoned his claim for four months before the date of the withdrawal order, and it was contended that it was not abandonment; that he was called away; that the weather conditions prevented him from working. I understand, however, it was held against him; that it was abandonment; and that he was not in diligent prosecution of the work.

Senator **Walsh**. Perhaps it would be well to let the Congressman get through with his statement.

Mr. **Sulzer**. It seems only fair that these men, holding as they do, less than 10 per cent of the field in question, should be permitted and encouraged to immediately continue their work to meet the great emergency now confronting Alaska and the Nation, and perfect their titles under the law as they originally started to do. It seems to me that this provision is perfectly fair and just.

I would like to urge this matter at this time on account of the urgent situation. Under the leasing law, if this is passed, it is going to take some time to do the work necessary to enable these men to carry on development. However, if this amendment is inserted, they are prepared to start operations immediately. These men on the ground at the present time are ready to drill for oil and undoubtedly can obtain it in a month's time. They can get the oil to supply the urgent need that exists in Alaska at this time. It seems to me it would be a very wise thing to permit them to do that.

The day before I left Alaska there was lying at the dock at Juneau one of the largest vessels that has ever come to Alaska. I can not recall now the name of the vessel, but it was four hundred and odd feet in length. It was an oil tank steamer that came up from California to supply the Alaskan stations with oil. It seems to me that, rather than take oil from California, if it is possible for us to get it—and I understand there is great danger that we may not be able to get it—

it would be wise to save that oil, especially when you consider that there is such a great need in other parts of the country for it, and that these tank steamers used to supply the Alaskan people with oil are in great demand. It seems to me that it would be very wise to use Alaska's oil in Alaska, rather than take it from California.

In this connection, I might say that the Alaskan fields are different from most of the other fields. They are quite different from all, I believe, except the Wyoming fields. The oil seeps through the slate rock to the surface of the ground, and it has undoubtedly been seeping for thousands of years and running to waste toward the sea. The creeks along the coast territory in this oil field carry oil upon the surface. It seems to me that, rather than have the oil go to waste and run away, it would be advisable to immediately pass some legislation which would enable the people to utilize that oil.

Senator NORRIS. In your amendment you spoke of the claimant. I think you used the plural number. Are these oil claims owned by individuals or corporations in large numbers?

Mr. SULZER. There are about 50 claims, Senator, in this field.

Senator NORRIS. How many owners? Are there 50 owners, or are those claims owned by a few people?

Mr. SULZER. I do not think there are 50 owners. I think there are several.

Senator NORRIS. Your amendment would enable one man or a corporation to get title to any number of oil wells, would it not?

Mr. SULZER. No, sir. I think that these 50 claims are held by many different people.

Senator NORRIS. But your amendment does not limit the number of tracts that may be patented by any one person?

Mr. SULZER. They must be tracts located prior to the withdrawal order.

Senator NORRIS. But one person may have located a dozen of them and got a patent to a dozen of them under your amendment?

Mr. SULZER. There are two companies operating in that field that have approximately a dozen claims.

Senator NORRIS. Each?

Mr. SULZER. I think one has a dozen and the other has not so many. The rest, I understand, are individual claims, or small groups.

Senator HUSTING. How many acres will be affected by this?

Mr. SULZER. I understand there are 160.

Senator NORRIS. In each claim?

Mr. SULZER. Yes, sir.

Senator KENDRICK. I would like to ask the Congressman if there are no filings in his territory on oil lands that have not been withdrawn by order of the Government.

Mr. SULZER. All the oil lands in Alaska have been withdrawn.

Senator KENDRICK. They have been withdrawn?

Mr. SULZER. Yes, sir.

Senator KENDRICK. You have no filings at this time outside of the withdrawals?

Mr. SULZER. No, sir.

Senator STERLING. They were all withdrawn under this one order order of November 3, 1910?

Mr. SULZER. Yes, sir.

Senator NORRIS. No claims were filed subsequent to that?

Mr. SULZER. No, sir.

Senator NORRIS. All these claims to which your amendment applies were filed on prior to the withdrawal order?

Mr. SULZER. They were filed on in about 1898 and 1899. That was many years before the withdrawal order took place. They were legitimately held during all that time.

Senator NORRIS. In what part of Alaska are they?

Mr. SULZER. In what is known as the Controller Bay section, about 60 miles east of Cordova and about 30 miles east from the Copper River.

Senator SHAFROTH. It is near the coast?

Mr. SULZER. It extends from the mud flats right up to the mountain tops.

Senator NORRIS. Are there any other oil fields in Alaska?

Mr. SULZER. Yes, sir; a good many.

Senator NORRIS. That have been prospected and developed some?

Mr. SULZER. To a limited extent. They are known and have been prospected. The withdrawal order, however, put a stop to operations and to the gaining of knowledge regarding these fields, because that part of the country in which they are located was not adequately known prior to this time. This one field was nearer south and was better known. There was more of a settlement in that vicinity.

Senator SHAFROTH. Does this order describe the lands that were withdrawn from entry?

Mr. SULZER. It stated all oil lands in Alaska.

Senator SHAFROTH. All oil lands?

Mr. SULZER. Yes, sir.

Senator SHAFROTH. It seems to me that would be an outrageous order.

Mr. SULZER. It prevented us from developing an oil supply of any nature whatever.

Senator HUSTING. How many producing wells were produced on the lands withdrawn?

Mr. SULZER. I think about 9 or 10.

Senator HUSTING. How many were dug in the last five years preceding the withdrawal order?

Mr. SULZER. That I can not say.

Senator HUSTING. What I want to get at is this. Can you give us any idea as to the amount of annual production in the Alaskan fields between 1898 and 1910?

Mr. SULZER. The development consisted largely of preliminary work, such as making surveys of the claims, making locations, getting the claims established, and matters of that kind, and a few wells were drilled.

Senator HUSTING. Did they know, before they entered, whether there was oil?

Mr. SULZER. It has always been known there was oil there, from the seepage.

Senator HUSTING. When was the first well dug in Alaska?

Mr. SULZER. Sir?

Senator HUSTING. When was the first oil-producing well developed?

Mr. SULZER. In 1901.

Senator HUSTING. How many well on that piece of property?

Mr. SULZER. Six wells on that piece.

Senator HUSTING. Can you tell us how many acres will be involved or affected by this proposed amendment?

Mr. SULZER. If all of these 50 claims were affected, it would be about 8,000 acres.

Senator HUSTING. Does that constitute the entire oil field?

Mr. SULZER. No, sir; that constitutes less than 10 per cent of that particular field. That is the only field where there are any bona fide claims in all of Alaska, I believe. My impression is that there were some locations in some other fields, but they were not held.

Senator HUSTING. Do you think they might come in under this?

Mr. SULZER. No, sir; I am advised they were abandoned.

The ACTING CHAIRMAN. You might limit it to that field in the amendment?

Mr. SULZER. Yes, sir. That could be done, but I do not think there is any necessity, for I know of no claims in any of the other fields.

Senator STERLING. It is claimed that each locator did his $100 worth of work each year?

Mr. SULZER. Yes, sir. He must prove that in order to make it a bona fide location, or a bona fide claim. He is bound to make that proof, or he would have no chance of acquiring a patent.

Senator STERLING. How is that proof made. I think I have known about it, but I do not recall now. It is by filing a sworn statement of the amount of work done each year?

Mr. SULZER. Yes, sir.

Senator SHAFROTH. He files it with the recorder?

Mr. SULZER. Yes, sir.

Senator STERLING. With whom is it filed in Alaska?

Mr. SULZER. With the United States recorder.

Senator STERLING. The Territorial recorder?

Mr. SULZER. No; there are no Territorial recorders. They are Federal officials. They are appointed by the Federal judges in the different divisions.

Senator STERLING. I see.

Mr. SULZER. Now, Mr. Chairman, there are several other suggestions I would like to make in connection with this bill. As I understand it, there is a provision that under the permit granted, title can be obtained for only one-fourth of the area, and the other three-fourths would be subject to lease. It seems to me that it would be a wise provision to give a person having a permit a preferential right to take a lease on the remaining three-fourths, for this reason: A man goes upon this oil claim for which he has a permit and he drills an oil well and obtains oil. Then he must immediately determine the quarter of that claim which he desires. The mere fact, however, that he has this one well does not indicate to him which quarter would be of most value.

Senator NORRIS. He would take the quarter that had the well on it, would he not?

Mr. **Sulzer**. He may be on the very edge of the oil-bearing area. He might just have struck it. He might take a quarter of ground, and it would be barren of oil, if he happened to get it in the wrong section. He could not tell by that one well where the pool of oil really was.

Senator **Norris**. Is it your idea that he should have more than one-quarter?

Mr. **Sulzer**. No, sir; but that he should have a preferential lease, so that another man could not come and bid $5 more and get the benefit of his work and expenditures in proving the ground.

Senator **Norris**. Anybody can bid——

Mr. **Sulzer** (interposing). I am speaking of the three-quarters.

Senator **Norris**. Under the bill he would not be entitled to but one-quarter. He can not be interrested in the others?

Senator **Shafroth**. I think he can become a lessee, but he enters into competition as to the royalty to be paid.

Senator **Norris**. I thought there were provisions preventing him from being interested in more than one section.

Senator **Shafroth**. To the extent of 2,560 acres. Beyond that he becomes subject to forfeiture of everything he has.

Mr. **Sulzer**. There is another matter that I would like to speak about. Practically all the oil-bearing lands in Alaska are worthless for any other purpose. The territory is so rugged that it is of no value for any other purpose.

Senator **Norris**. How deep are these wells?

Mr. **Sulzer**. I think they are only four hundred to a thousand feet.

Senator **Norris**. Is that all?

Mr. **Sulzer**. Yes, sir.

Senator **Norris**. Is it rock?

Mr. **Sulzer**. Yes, sir.

Senator **Kendrick**. I would like to ask Mr. Sulzer if the wells in Alaska that he has compared to Wyoming wells are flowing by gas pressure, or whether he has to pump them?

Mr. **Sulzer**. I believe that they flow.

Mr. **Joslin**. They flow intermittently, but generally are pumping wells. They flow when first struck.

Senator **Kendrick**. Have you demonstrated whether you have more than one sand?

Mr. **Joslin**. We have never found any sand. No well has ever been dug deep enough to reach the sand.

Mr. **Sulzer**. Another important matter is the fact that paraffin oil and paraffin wax are in great evidence throughout this oil territory. In many cases there is a great deal of seepage. In that connection we consume a great many candles, because our chief industry is mining. That is an industry which uses candles to a large extent, and the opening of these fields would supply us with candles, which it would be very economical to use. We have been compelled to import these candles up to this time.

I would suggest, also, Mr. Chairman, that another change be made in this bill. I desire to suggest a change in that part of the section of the bill where it provides all funds derived from the leasing of these lands shall go into the building of railroads in Alaska. I suggest that that be changed to read, " For the construction of wagon roads and trails." I will read it as I have changed it. The change is to be in lines 24 and 25 on page 19 of the bill:

> And all moneys received from royalties and rentals in the Territory of Alaska under the provisions of this act shall be paid into the Treasury of Alaska, to be appropriated by the legislature, for the construction of wagon roads and trails.

In other words, strike out after the word "into," in line 24, and insert "the treasury of Alaska, to be appropriated by the legislature, for the construction of wagon roads and trails."

In connection with that suggestion, I would like to state that this is entirely virgin country up there. There are no roads of any kind, and it seems to me that the greatest benefit to be derived from the payment of these fees paid for these leased lands would be the building of wagon roads and the opening up of this country and these fields. That is a very necessary matter in connection with the railroads. Without wagon roads and trails as feeders the railroads can not open up the country. The railroad can not be of so much benefit without wagon roads, because it is necessary to go from the railroad in order to develop the country.

Senator NORRIS. The railroad runs through this territory?

Mr. SULZER. No, sir.

Senator NORRIS. How far from it?

Mr. SULZER. The Government railroad is probably 200 miles distant. The nearest railroad to these fields is the Copper River & Northwestern Railroad, which starts at Cordova. That is a private road owned by one of the mining companies.

The CHAIRMAN. It is owned by a mining company?

Mr. SULZER. Yes, sir. I think if a railroad could be built from the Copper River into this field it would also open up the coal field. It would seem that that is the logical way to open up that country. It would only require about 30 miles of railroad to accomplish that purpose. It would open up the coal fields as well as the oil fields.

Senator NORRIS. How is this oil transported to the ocean now?

Mr. SULZER. It is taken by pipe line.

Senator NORRIS. You have pipe lines?

Mr. SULZER. One small pipe line.

Senator NORRIS. To Cordova?

Mr. SULZER. No, sir; just to the coast.

Senator NORRIS. Then it is taken by steamer?

Mr. SULZER. Gasoline launches and barges.

Senator NORRIS. What becomes of it?

Mr. SULZER. It is consumed right there in that section by the fishing people—local users.

Senator NORRIS. Used for fuel?

Mr. SULZER. It is used principally for gasoline boats.

Senator NORRIS. You stated a while ago that you had a refinery there. Is that extensive?

Mr. SULZER. It is a small refinery. The refining process for this oil is very simple. It is a high grade of oil.

Senator STERLING. Where is the refinery located?

Mr. SULZER. Katalla, or 2 miles from Katalla, right on the coast.

Senator STERLING. Is there a harbor there? Are there any boats doing business—large-size boats?

Mr. SULZER. Yes, sir; they call there.

Mr. JOSLIN. There is no harbor. It is open. It is a small slough that runs up from the bay, on which small boats, of 20 to 40 tons, can get to the refinery. From there they go to the open sea and make hauls of 60 to 100 miles, generally speaking. Except what is sold at the refinery to the fishing people, a big part is hauled 60 or 70 miles in the open ocean in small boats.

Mr. SULZER. I believe that I have called the attention of the committee to the fact that we feel there should be a double-area grant so far as Alaska is concerned. In that connection I have some photographs showing these fields and the conditions existing there. I would like to show them to you.

(At this point Mr. Sulzer exhibited photographs to members of the committee).

Senator SHAFROTH. Do you mean that you would like to have 5,000 acres instead of 2,500?

Mr. SULZER. Yes.

Senator HUSTING. For oil?

Senator SHAFROTH. For special permit?

Mr. SULZER. Yes. These photographs show the condition of the fields. A man might locate 2,560 acres and it would be partly under a glacier, and that part would be worthless. The entire section there [indicating on photograph] is rugged.

Senator NORRIS. The coast is near here [indicating]?

Mr. SULZER. Yes, sir.

Senator NORRIS. These views are right on the coast?

Mr. SULZER. Yes.

Senator KENDRICK. It is along there [indicating] that you find the seepage?

Mr. SULZER. Yes, sir; along these creeks and streams.

Mr. Chairman, if I may be permitted, I would like to say a few words in regard to the coal lands in Alaska.

Senator HUSTING. Before you leave the oil land question, I would like to ask you a question or two. Coming back to the work of development that has been done, were these developments made exclusively for oil?

Mr. SULZER. Yes.

Senator HUSTING. There is no coal or any other mineral on this land?

Mr. SULZER. No, sir.

Senator HUSTING. That is really all the land is good for?

Mr. SULZER. Yes; that is all it is good for. There is a small amount of scrub timber, but it has no value, except for local development of the oil fields. Outside of a small amount of timber, there is nothing of value upon the land except oil. The fields are valuable for oil only.

Mr. Chairman, we have been unable to use any of our own coal in Alaska. I think it will be readily recognized that the industries which we have been developing in Alaska, such as the mining industry, the fishing industry, and the other industries, are more or less dependent upon the supply of fuel. We have been forced to obtain our supply of coal from British Columbia, largely. Up until a few years ago we had to pay a considerable duty upon that coal. The duty has since been removed. We have obtained supplies from the

State of Washington and from Australia and Japan. That coal has cost the people of Alaska all the way from $10 to $100 a ton, depending upon the location of the place where it was used. I have personal knowledge of two smelters which were started in Alaska many years ago, in about 1904 or 1905, for the treatment of ores. They were in my particular section of the country, a section where I have lived for 15 years. I think those smelters owe their failure largely to a lack of proper and adequate supply of fuel. The same thing is true with regard to the entire coast and also the interior. The development of Alaska until this time has consisted almost exclusively of bonanzas. When you get beyond the bonanza it is impossible to proceed, because the costs are so excessive and so prohibitive that we can not do anything without cheap fuel.

Throughout the interior only the rich placer mines can be worked. The cost of wood, which it is necessary to use, is from $16 to $20 per cord, and it makes a cost, figured upon a coal basis, of about $30 a ton. That condition largely makes everything else costly and prohibitive; it makes labor very high, as well as all supplies, so that the entire Territory is at the mercy of an inadequate supply of fuel. We have been unable, in other words, to obtain the fuel without paying an excessive price for it.

An unfortunate condition in connection with that situation is the fact that we have, probably, the greatest coal fields in the world right there upon the ground within a few miles of all these industries.

The Geological Survey has estimated that there are over 12,000,000 acres of known coal fields in Alaska. There is undoubtedly twice that amount. I would state that it is quite certain that there are 25,000,000 acres of coal-bearing lands in Alaska, because a great part of Alaska is practically unknown. It has not been prospected or developed in any manner.

Outside of the Bering River field, which is near this oil field, upon the coast, about 30 miles from the Copper River, and the Matanuska field, which is extensive and to which the railroad is now being built, there are large fields in the interior of Alaska. There are enormous fields of coal in the Nenana Valley.

Senator KENDRICK. What is the character of the coal?

Mr. SULZER. We have all grades of coal, from the lignite up to the highest grade of anthracite. All grades of coal that are known are found in Alaska. We have the very highest grade of steaming coal and good anthracite coal.

Senator STERLING. Is it pretty well demonstrated that you have anthracite coal there in great quantities?

Mr. SULZER. Yes, sir. These fields have been thoroughly examined and explored by mining experts and Government engineers, and they have all agreed that we have fine anthracite coal, particularly in the Matanuska fields.

Senator HUSTING. Has any ever been mined? I mean even for experimental purposes.

Mr. SULZER. Not to any extent. There were about a thousand tons taken to the coast and used by one of the battleships in a test, and the results, I understand, were extremely satisfactory at that time. It was demonstrated that the coal was superior to the best Pocahontas coal of West Virginia.

Senator **Sterling**. There is a great deal of lignite?

Mr. **Sulzer**. Yes; there is a great deal of lignite. The Nenana fields consist almost entirely of lignite. They are very extensive. The people of the interior have been waiting for this coal. They have been waiting for the railroad to come and bring coal.

Now, what is the condition which exists in regard to the coal lands of Alaska? I would like to state briefly, if I may, just what the situation is. The first act regarding the coal fields was the act of 1900, which applied the general coal laws of the United States to Alaska. That act became abortive in Alaska for the reason that there were no surveyed lands in Alaska.

The **Acting Chairman**. Mr. Sulzer, this committee is entirely familiar with the legislation in Alaska.

Mr. **Sulzer**. Then, Mr. Chairman, I will not go over that except to state that in Alaska the act of 1914 is practically inoperative.

Senator **Norris**. I would like to hear you on that.

Mr. **Sulzer**. The act has been in force for three years. There has been absolutely no land taken under it in Alaska except one lease. William Martin took one and has recently turned it over to the Government. We can not operate under that law. It has proven prohibitive.

The **Acting Chairman**. What is wrong with it?

Senator **Norris**. What is the matter with it? We are interested in having Alaska developed.

Mr. **Sulzer**. The difficulty is that the leases are so drastic no man feels he can afford to go and take a lease under it. There are a great many forfeiture provisions in the leases which place a man in the position of taking a chance of forfeiting his investment and of being prosecuted criminally if he does anything at all up there. The unfortunate condition which has existed in Alaska in the past makes everyone wary of undertaking anything there, because under the law of 1904 there were some 1,200 different individuals who went and took up coal lands in Alaska and the lands were subsequently withdrawn. Many of these people were prosecuted criminally who believed they were complying with the law and attempting to develop the Territory.

The **Acting Chairman**. Is there any provision allowing a man to take up 10 acres for his own use without royalty or anything else?

Mr. **Sulzer**. Yes, sir.

The **Acting Chairman**. What is the matter with that provision?

Mr. **Sulzer**. That is all right, but it is a very small matter.

Senator **Walsh**. Why do you talk about prosecutions under the old law? They were prosecuted because they violated the law. They endeavored to acquire title under the law in defiance of that law by making entries that were dummy entries. You spoke about the criminal provisions. The criminal provisions are inserted in the law with the intention of preventing them from taking more land than the law permits them to take. If a man takes only what the law permits him to take, he is in no danger of criminal prosecution. The law is perfectly plain that he can have 2,560 acres.

The **Acting Chairman**. There is something wrong with the conditions, because the law has not proved operative.

Senator PHELAN. I think, Mr. Chairman, this would interest the committee. It is the very latest decision on that question. The question of diligence here, I think, fits the Alaskan case admirably.

The CHAIRMAN. That is not in connection with what we are now discussing.

Senator SHAFROTH. Is it not due to the fact that you can not raise capital on a lease with so many forfeiture provisions in it?

Mr. SULZER. Yes; that is true.

Senator Shafroth, you made a prediction when the leasing law of 1914 was passed that it would not be effective. I think that is the case. I do not think that companies and men who have money feel justified in going up there and endeavoring to open coal fields under existing law.

Senator SHAFROTH. If they have to see that each monthly royalty is paid, is it not true that capitalists will not put in money subject to that close investigation?

Mr. SULZER. It is not the royalty. That is not excessive, but it is the fact that a man has no jurisdiction over his own business. He can not go up there and feel free. He is subject to too many uncertainties. He has enough natural uncertainties when he gets into new territory.

Senator NORRIS. What are the uncertainties?

Mr. SULZER. The uncertainties are that he must open his mine in a specified manner. He must, in other words, operate his mine up there almost exactly as a man would be required to operate in the State of Pennsylvania, which has been developed for 100 years. It is a much different condition than exists in the Territory of Alaska.

Senator WALSH. There is nothing in the law telling how a man must operate land.

Mr. SULZER. It is so construed in the rules and regulations.

Senator WALSH. That is another thing. That should be addressed to the Secretary of the Interior, and not to this committee, to draft an amendment to the law.

Mr. SULZER. I do not care to suggest a draft for an amendment, but I would like to suggest a change in the bill. On page 2, line 3, I would like to strike out the words "exclusive of those in Alaska."

Senator WALSH. So as to make this bill applicable to Alaska?

Mr. SULZER. Yes, sir.

Senator WALSH. But under this bill you get only 2,560 acres; under your bill you get twice that amount.

Senator NORRIS. The reason we excluded that was we tried to be liberal with Alaska.

Mr. SULZER. This bill is more liberal than the law under which we have been endeavoring to accomplish something for three years. I would suggest that these words be stricken out in line 3 and also in line 14, on the same page.

Senator HUSTING. I have heard that before. I have heard that objection made to the leasing bill. I have heard it said that a man would not go in and invest capital under the leasing bill. Is it not a fact that the coal business is done by operators to quite an extensive extent on leases from private persons?

Mr. SULZER. Yes, sir; that is true.

Senator HUSTING. Why should they object to operating under leases from the Government when it appears, as a matter of fact, from some of the testimony given before this committee, that the royalties are less and the conditions less onerous under the public-lands leasing bill than they would be under leases from private ndividuals?

Mr. SULZER. There is one great reason, I think, and that is this: With the Government a private party has no redress; with a private party he has a remedy at law; but with the Government he can not do anything.

Senator HUSTING. What do you mean by saying that he has no redress?

Senator SHAFROTH. He means that he can not sue.

Mr. SULZER. I mean that these people who take up these coal claims in Alaska have no redress.

Senator HUSTING. It seems to me if anybody had to do any suing the Government would be the one in a position to do it.

Mr. SULZER. The Government confiscated a half million dollars of their money. It has refunded some of it. They spent three to four million dollars up there, and their property was confiscated. There has been a great deal said about dummy entries. I think there were a great number of people who acted in good faith and who were not justly treated. I do not believe that all of the 1,200 people who were citizens of the United States went up there with the idea of resorting to dummy entries. There have been a great many prosecutions, but there has not been a conviction in any case.

Senator HUSTING. Do you mean confiscation by withdrawing lands from entry?

Mr. SULZER. Yes, sir.

Senator HUSTING. Haven't they a remedy in the Land Office?

Mr. SULZER. They have no appeal from the Land Office. They can not go to the courts.

Senator NORRIS. That was on the theory that these men had violated the law, where the property was confiscated. In other words, these entries were disallowed by the Land Office on the ground that the entrymen had not complied with the law.

Senator WALSH. I hope, Mr. Chairman, we will not have a general discussion of the Alaskan subject, which we have gone into so fully on other occasions. Let us give the rest of the country a little chance.

Senator PHELAN. I would like to put this in the record at the proper place, where the question was asked in regard to the diligence required. This is the report of the decision in the case of the United States of America *v.* The North American Oil Co., Consolidated.

The CHAIRMAN. That is already in evidence.

Senator PHELAN. I know; but it is in answer to this particular question. I think the members of the committee would like to see it.

Senator WALSH. I understand the Congressman to ask that the provisions of this bill be extended over to Alaska and that the existing bill be thereby repealed?

Mr. SULZER. Yes, sir.

Senator STERLING. Would you have the existing law repealed as to the number of acres taken?

Senator WALSH. I was in error about that; 2,560 is the limit.

Mr. **Sulzer**. It is apparent that no development is being made in Alaska. We feel that under this bill there would be some actual immediate development.

Senator **Phelan**. The reason I want to bring this up at this time is that I want to know, in view of the decision, if the Delegate would still have his amendment put in the bill. I desire to read this:

> To bring an occupant or claimant of oil or gas bearing lands within the provisions of the Pickett Act it is not necessary that he was engaged in actual drilling for oil or gas on a particular tract at the date of withdrawal, or necessary that work was then being performed upon the identical claim upon which discovery must ultimately be made in order to make location. It is enough if reasonable effort was being made at that time indicating a bona fide intention to complete the work of discovery on the particular claim with all practical expedition, such intention being manifested by the doing of physical act or acts which had a direct tendency to facilitate the exploration and discovery of oil or gas thereon, although drilling had not commenced and the work may not have been on such claim.

Senator **Norris**. What is the date of that decision, and what court?

Senator **Phelan**. The district court of the United States for the southern district of California, Judge Bean sitting for a special assignment.

The **Acting Chairman**. It is case No. A-48, in equity.

Senator **Phelan**. I will read the next paragraph.

Senator **Norris**. You did not give me the date.

Senator **Phelan**. June 7, 1917—

> Diligent prosecution of work leading to discovery upon a mining claim depends so largely upon the physical conditions of the locality, the nature and situation of the region, its accessibility, the magnitude of the work, the difficulty of securing material and supplies, and the like, that each case must rest largely on its own facts and circumstances, and a decision in one is of but little assistance in another. Since, however, the law does not require an unusual or extraordinary effort, but only that which is usual, ordinary, and reasonable under the circumstances, I am of the opinion that the oil company was in diligent prosecution of work leading to discovery at the date of withdrawal within the meaning of the Picket Act. It was when overtaken by the withdrawal, and for months before had been in occupation of each claim engaged in work necessary and proper in order to effect a discovery thereon, with the then present bona fide purpose of completing such work with all reasonable expedition, and was at the date of the withdrawal doing all that could reasonably and justly be expected of it under the circumstances. The law does not require a vain or useless thing to be done, and therefore the oil company was not required by the law of diligence to have installed all its machinery or commenced drilling before its supply of water was such that it could reasonably hope to successfully do the work. Nor was it required to make any unusual or extraordinary effort to obtain water, but only such as was reasonable under the circumstances confronting it. Its possession, the work which it had done and was then doing was such that it would have been protected by the courts from intrusion by private parties if the order had not been made.

Mr. **Sulzer**. I am not familiar with the technical stumbling block in this matter. I would like to have permission to have Mr. Joslin make a brief statement, because I think he is familiar with the troublesome condition.

The **Acting Chairman**. Are you through now, Mr. Sulzer?

Mr. **Sulzer**. I would like to state before I finish that what I have said is not applicable entirely and solely to Alaska. This is a situation which affects the entire Pacific coast. The Pacific coast needs Alaskan coal. A great part of the country needs it. The United States Navy needs 250,000 tons a year, and is most anxious to get it.

I urge that in looking at the matter you do not consider it as an Alaskan matter entirely; it is a national matter; it is a matter involving the welfare of the whole country. I hope that the committee will look at it in that way. Give us the same consideration that the rest of the country has received. If we do not get it we will remain stagnant, as we have been for years.

Senator HUSTING. What is the status of the railway there? Is it completed?

Mr. SULZER. No, sir; it is not completed. The railroad has been built for about 75 miles from Anchorage toward the interior. It is in the coal fields. It is operating there now.

Senator HUSTING. When did it enter the coal fields?

Mr. SULZER. It is in there now.

Senator HUSTING. I mean when did they complete it to the coal fields?

Mr. SULZER. Last year they completed it to the coal fields. It has not reached the valuable part of the fields. It is hoped that that will be done during the summer.

Senator HUSTING. How many miles have been built?

Mr. SULZER. Seventy-five miles from Anchorage to Matanuska, and 15 miles from Anchorage toward the coast, toward Seward. The Government purchased the Alaska Central Railroad, which had been built previously and was finished from Seward for 75 miles toward Anchorage. They hope to have that connection this year, so as to have a road built from Seward right to the Matanuska coal fields. Then they are building from Nenana in the interior of the Territory south toward the coast. They are building the road from that end also. They have also done a great deal of preliminary work, such as cutting the right of way and grading. The road is well under way.

Senator HUSTING. I want to ask you this: The only way to have gotten into the coal fields before the railroad was built, and to mine coal and get it to the seaboard, was by packing it?

Mr. SULZER. Yes, sir.

Senator HUSTING. Don't you think that had something to do with the want of development?

Mr. SULZER. Yes, sir; but the Alaska Central Railroad was started for that particular purpose.

Senator HUSTING. You say it only reached there last fall and has not yet reached the valuable coal fields.

Mr. SULZER. It was built many years ago. It was in process——

Senator WALSH (interposing). The Senator is trying to find out why the present coal-leasing law does not work. He has called your attention to your statement that that law should be repealed, or should be amended. You say that it does not work. The Senator is inquiring what the reason is, and he wants to know if, when the railroad gets into Matanuska, there will not be claims taken up and developed under that law.

Mr. SULZER. I do not think so, for this reason: It takes a great deal of time to open the coal fields. If people had any intention of doing it, they would be there now so as to have the coal mines opened when the railroad got there. When the railroad gets to a particular claim or section, you can not put the coal on the car. There has to be work of a preliminary nature. You can not rush these matters in Alaska. I know the conditions, as I have been mining there for

15 years myself. I know the difficulties that every person is confronted with. If anyone had an intention of taking up land under these leases, they would be there now, so as to have everything in shape when the railroad gets there.

Senator STERLING. Your idea seems to be that the matter will not be solved until the law is made more liberal?

Mr. SULZER. Yes, sir.

The ACTING CHAIRMAN. You want Alaska treated the same as the rest of the United States with regard to coal?

Mr. SULZER. Yes, sir; we would like to have double the area for both oil and coal, because of the extreme conditions in Alaska.

Mr. Chairman, I desire to thank the Senators of the committee for their courtesy in granting me so much of their time.

WITHDRAWAL ORDER OF NOVEMBER 3, 1910.

[Petroleum reserve No. 12—Alaska No. 1.]

NOVEMBER 3, 1910.

It is hereby ordered that all the public lands and lands in national forests in the District of Alaska containing petroleum deposits be, and the same are hereby, withdrawn from settlement, location, sale, or entry, and reserved for classification and in aid of legislation affecting the use and disposal of petroleum lands belonging to the United States.

WM. H. TAFT, *President*.

Referred to the Commissioner of the General Land Office for appropriate action.

R. A. BALLINGER, *Secretary*.

STATEMENT OF MR. FALCON JOSLIN.

Mr. JOSLIN. Mr. Chairman and gentlemen of the committee, I am president of the St. Elias Oil Co., which was organized within the last year. We took over property which was then in the hands of a receiver, and had been for two or three years previously. The old company had holdings of seven or eight thousand acres of oil lands in the Katalla oil fields, Alaska. This company of which I now am president acquired about one-third of the claims held by the old company. It has, in other words, 14 unpatented claims and 1 patented claim. The one patented claim has six wells on it. The first one was drilled in 1901 and the last one was finished, I think, in 1911 or 1912.

The drilling and the work from the beginning—of course I was not at that time connected with the company; I only became interested in it last year; but I know the conditions from investigation—was at first very vigorous. On the total group there were between $400,000 and $500,000 expended. The country up there is very rugged, the undergrowth is dense, and there were no roads nor bridges at all. There were no docks or houses for the men to live in, and all those had to be built before they could begin drilling the oil fields. The group of claims stretches approximately along the beach for about 12 miles. One of the first things that was done in the way of preparation to drill on this land was to get a road across the claims so that they could haul the machinery and the necessary supplies and equipment. That road was necessarily very expensive to build. The aggregate length of the roads is over 20 miles. The cost has been over $3,000 per mile, so that there has been in the aggregate an expenditure of $60,000 or $70,000 for building the roads. Then they had to build docks to which to bring the boats. Some of the docks have now rotted away. They had to build houses. They put up two or three sawmills. There was some saw timber on the land. They built shops and warehouses, offices and bunk houses. They had necessarily to do a great deal of work along those lines. They were carrying on the work at the time of the withdrawal order in 1910.

There had been some change in the organization previous to that time, but I believe at the time of the withdrawal order, in 1910, they were drilling. Of course, they had no notice of the order; there was nothing published; it came like a thunder clap out of a clear sky. When the order came it more or less demoralized the work.

They had previous to that time drilled four or five wells and had succeeded in getting one claim to patent. They had drilled another claim in the eastern end of the field, 10 miles from the first, and got oil in that, but they did not pump it. The oil is standing in the well to-day near the top of the casing. They drilled two other claims in the eastern end of the field and got more or less oil and gas.

Then, on the claim adjoining No. 1, at the western side of the field, they drilled what is known as the Redwood Claim, No. 11, and got oil, 2 miles from the No. 1 claim. They got oil in that, but they did not pump it. The oil is standing in that well to-day, unused and undeveloped. It was drilled 10 or 12 years ago.

When the order came out it immediately threw doubt on the title to all those claims which they had held by possession only and which they had not succeeded in drilling. They had done, as I have already stated, several hundred thousand dollars worth of work on the whole group, having built roads, docks, tramroads, etc. They had drilled on four claims and gotten oil on one 2 miles and the others some 10 miles away from the headquarters claims.

That order made it impossible to find additional money to carry on the work because of doubt whether, if they drilled wells after the order and got oil, they could get a patent to the claim, although, as Senator Phelan has said, the Pickett Act proposed to protect those in diligent prosecution of work. Just what constitutes diligence is uncertain. In the case Senator Phelan cited the Government thought there was not sufficient diligence, because it brought suit to forfeit that claim. The district court, which has decided in that particular case that there was sufficient diligence, is not the court of last resort. It is quite possible the Government may appeal that case and yet establish that the diligence in that case was not sufficient.

The company got into difficulties——

Senator HUSTING. Are you referring now to the same decision that Senator Phelan quoted?

Mr. JOSLIN. I was referring to that case with reference to its bearing on the situation in Alaska.

Senator NORRIS. Before you leave that point: Why is it that this company is not entitled to a patent on that claim where it discovered oil?

Mr. JOSLIN. They are entitled to a patent. They did not make application for patent, because they wanted to get more land. Those detached claims would be practically useless unless they could get other claims adjoining them. That is what I wanted to say. The oil is standing in those two wells to which I referred to-day and has been for 10 years. It can not be used, because there is not area enough to justify putting in the necessary facilities.

Senator NORRIS. I think you should get a patent to those claims.

Mr. JOSLIN. You can not develop economically a single claim situated as those are. You must get a group of lands large enough to justify putting in the facilities for handling, refining, and marketing the oil.

Senator HUSTING. You have been describing a claim here. Have you claims in Alaska in which you are interested that have been passed upon by the court?

Mr. JOSLIN. No; I referred to the case from California to illustrate the principle.

Senator HUSTING. You gave a description of work done. That is work done in connection with your Alaskan claims?

Mr. JOSLIN. Oh, yes, sir. There was many thousands dollars' worth of work done in building roads and in making surveys. All those claims, some 50 in number, were surveyed by the applicants. Surveying claims costs money in that country. The undergrowth is very dense, and the lines must be chopped out. The surveys are very costly.

Senator PHELAN. How many acres has your company?

Mr. JOSLIN. Fifteen claims, or, roughly, 2,200 acres.

Senator SHAFROTH. You claim that 2,200 acres is too small a tract?

Mr. JOSLIN. Yes, sir; it is too small. There ought to be several thousand acres certainly for the first development in that country, because all the facilities have to be created. We are working now with a small refinery. It is a 60 or 70 barrel refinery.

We have not applied for patent for those other claims, because we are still doing the assessment work, or what they call assessment work—annual labor—and holding those unpatented claims which lie between the claims on which wells that have been drilled in the hope of getting a sufficient quantity of land to justify financing a corporation with sufficient capital to do the work economically.

Senator NORRIS. How far from the wells that you are using are these other wells?

Mr. JOSLIN. The Redwood well is 2 miles from the wells on No. 1. The well at Chilcat is about 12 miles away. That well might produce a considerable quantity of oil if it were pumped, but you could not put in equipment for one well. It would cost $25,000 to build a pipe line to it. It is also an old well, never used, and its casing is probably rusted out; consequently it is valueless.

Senator STERLING. Do you mean to say that in the meantime, since the withdrawal order, you have been doing development work on those claims where you have been producing before?

Mr. JOSLIN. We have been pumping the wells on the patented claim and doing assessment work on those other claims every year for 12 or 14 years. I spent last year, speaking for the company, over $2,000 for assessment work.

Senator STERLING. By what authority?

Mr. JOSLIN. On the theory that if one kept up assessment work involving the expenditure of $100 on work annually, that in some way the title would be protected and the improvements would not be forfeited and lost.

Senator STERLING. There was no interference with that assessment work, was there?

Mr. JOSLIN. Oh, no. It was proved every year by affidavits filed in the records.

Senator SHAFROTH. You have done more than $500 worth of work?

Mr. JOSLIN. I suppose there has not been less than $5,000 worth of work done for each claim.

Senator SHAFROTH. Why don't you go to patent?

Mr. JOSLIN. Because of the lack of discovery on those intervening claims.

Senator WALSH. The claims are not contiguous?

Mr. JOSLIN. No. Referring to the previous question, a great deal of the assessment work was done on those roads. Work done upon a road reaching a mining claim is considered work in the development of the claim.

There are seepages on those claims. Seepages probably could be found on every single one of them. On many of the claims there are springs of oil. On all the claims there is evidence of wax and oil residue to be found in the shale, so that you can find evidence of oil in every claim. They did assessment work on the theory that those discoveries were sufficient discoveries, but it has never been brought to a test by applications for patent. Many of the owners still think that their discovery of seepage is a sufficient discovery, especially when it is considered that when wells were drilled in the neighborhood of the seepages they have almost invariably found commercial oil. They were under the impression that their discoveries were sufficient. The recent decisions, however, have thrown doubt on those discoveries. Now, many claimants are in the position of not knowing whether they shall continue assessment work or not. One man came to me last fall and said that he had four claims. He said that he had been doing assessment work on them for 14 years. He had heard a remark I made about the decision in the Obispo case in reference to discovery of oil, which made him doubt whether he should continue or not. He said he hated to give up his claims which he had held so long and done so much work on, and asked my advice about it. He is an honest man and a good American citizen. No one could tell him just what to do. I told him since he had held them so long perhaps he had better do the work one more year. So there is a question whether these claims might not be held valid because of these seepage discoveries on them.

Now, as to the decision quoted by Senator Phelan. There is a question whether the claims that have been so held may be patented, because the work done on them may not have been sufficient diligence. For two or three years, when this property was in the hands of receivers, the receivers kept at work on the wells and did the annual assessment work on the unpatented claims under the orders of the court, but it is a question whether the diligence which was continuous on that patented claim, together with the annual assessment work on the others, could be counted as diligence for the whole group.

I understand that there is another decision recently which throws more doubt upon whether you can make discoveries on the claims in a group successively. It raises a doubt as to the validity of the group theory.

When I first took hold of this matter I confess I did not understand as much about the law as I have learned since, or I would not have gone into it. As soon as I discovered this group theory announced in the Honolulu case and more or less confirmed by the circuit court of appeals decision in the Ohio case I felt confident that we could continue drilling on the claims. Now, very recently, there has been doubt thrown upon that, and I am at a loss to know whether, if I drill on our No. 12, Redwood, claim that will be considered in connection with the work done on No. 11, where we have a well adjoining. We are in great perplexity.

The demand for oil, of course, is exceedingly great. We are trying to supply the country immediately around us. In that respect there is a different situation from what there was when the old company began. When that company began there was no local business at all. If they could not get a large quantity to justify shipping beyond seas in tank steamers, they could not do business at all; but in the last few years the use of oil products has greatly increased and there is now quite a local market, so that we are able now to sell all that we can produce right there. In fact, we could sell ten times as much, if we had it.

We began some two months ago to drill a new well on this patented claim. I would have liked very much to have drilled on the unpatented claim, but was afraid to do so for fear if I should get oil the Government would sue us and we would lose the work.

Senator **Phelan**. What is it estimated to cost to drill a well on the unpatented land?

Mr. **Joslin**. About $10,000. We have got a new well on this patented claim. It was 980 feet deep a week ago. I suppose it is by now 1,200 feet. But we got no oil in it, and must now abandon it. These are some of the vicissitudes and natural hazards of the business.

I have a telegram from the manager in which he asks where he shall drill the next well. Apparently No. 1 claim, with the six small wells on it, has already been developed.

When this decision that Senator Phelan has referred to was made public I wired the manager that "recent decision seems to justify drilling on the unpatented claims," and advised him to drill a well on the adjoining claim and take a chance. It is a gamble. We have enough natural conditions to gamble with; we should not have to gamble against the legal conditions.

Senator **Shafroth**. You are right about that.

Mr. **Joslin**. I presume in a few days we will have started in on the unpatented claims. We are in danger, of course, of having the well taken away from us. However, I can not think but that, if we drill the well and get oil, the Government will be merciful in the event the decision goes against us and we do not get our patent. In the meantime the canneries there are in bad shape on account of the lack of oil. They have been depending upon us for their supply, but we can not supply them now. Our new well did not get oil, and we had to notify them that they would have to get their oil from California. It is expensive and difficult to get oil from California, and growing more difficult all the time.

Senator NORRIS. You say that there are wells in which the oil is standing now. How large are they?

Mr. JOSLIN. The wells we pump only produce an average of about 10 barrels a day. The wells are old wells. They are more or less clogged with paraffin.

Senator NORRIS. You have got to pump them?

Mr. JOSLIN. Yes, sir.

Senator NORRIS. It would not pay, considering the amount of oil you get now, to haul it to the canneries?

Mr. JOSLIN. It would not pay to put the equipment in. The casing is probably valueless now. In drilling the new wells we could have drilled near these others, but we prefer to drill where the pipe lines are, instead of going 10 miles away.

Just as soon as there is something definite as to the title, we will increase the capital, put on more drill rigs, and drill wells as fast as we can.

Senator WALSH. About how much land do you think you should be permitted to take out?

Mr. JOSLIN. The oil experts say that it ought to be two or three times the amount in the Western States, which would be from five to seven thousand acres. My own judgment is that that unit is small enough; that 2,560 acres is not sufficient to justify economic development.

Senator WALSH. Suppose you were not able to perfect title to those others, or not able to get patent, upon the ruling that the work did not come within the provisions of the act, then these lands would be open to lease under the provisions of the act?

Mr. JOSLIN. Yes, sir.

Senator WALSH. You are not afraid, are you, that the Interior Department would not recognize that you are pioneers in that locality, and that it was by reason of your efforts that the region was opened up? You are not afraid they would take it away and give it to some one else, are you?

Mr. JOSLIN. I am not so sure that they would have any discretion in the matter.

Senator WALSH. Under this they get no more than 2,560 acres.

Mr. JOSLYN. Yes. The language of the bill also provides that the land shall be leased by competitive bidding; consequently, if we fall within that, we would be obliged to go into the open field and compete on a bid for the very lands we had developed. The bidder against us would have the advantage of all our improvements, which cost him nothing, and which have cost us a great deal of money.

Senator WALSH. The language reads:

> Shall be held subject to lease, and may be leased, by the Secretary of the Interior, through competitive bidding or such other methods as he may adopt by general regulations—

And so forth.

Mr. JOSLIN. That language is all right. That gives to the Secretary of the Interior the power of establishing regulations which might recognize our equities. He probably would do it, but we do not know that. I referred to the language of H. R. 406 under which there must be competitive bidding.

Senator WALSH. It does seem to me, Mr. Joslin, that if you came down and tried to get a lease on that land and some other fellow who was an interloper and who had never spent a dollar on it, was also trying to get it, and it was a proposition whether the Secretary should give it to you or to the other fellow, you would have no reason to fear the result.

Mr. JOSLIN. Perhaps not.

Senator PHELAN. How long have you been in Alaska?

Mr. JOSLIN. Nearly 20 years.

Senator PHELAN. I have a distinct impression that the number of prospectors who make a success is infinitesimal compared to those who fail.

Mr. JOSLIN. There is not one in a hundred that makes his fortune in either oil or gold.

Senator PHELAN. The business is a losing business, and the Government is wise to encourage it.

Mr. JOSLIN. It certainly is wise. The land is utterly valueless without prospecting.

Senator PHELAN. If the Government is a careful father presiding over its children, it would not lead them into a sure-thing loss, by the administration of the law. The Government is not wise because it seems to require sacrifices of its children.

Mr. JOSLIN. The Government has committed many cruel wrongs to a very worthy class of men. I speak without reference to my own case, because I have not been a pioneer in the business.

Senator NORRIS. Have you been in the mining business for a very long time?

Mr. JOSLIN. No, sir. Railroad building is my work.

Senator NORRIS. Did you build the Copper River Railroad?

Mr. JOSLIN. No, sir. I built the Tanana Valley Railroad.

Senator PHELAN. Did you say awhile ago that you had a conversation with Gifford Pinchot, or was that Mr. Sulzer who said that?

Mr. JOSLIN. No. I never had any conversation with him.

Senator PHELAN. I would have liked to have asked what the situation was with respect to Alaska more in detail.

Mr. JOSLIN. I understand that he is favorable to any sort of reasonable development of the territory.

In answer to Senator Walsh's question that if there is a leasing law passed we could rely with some confidence upon getting just treatment, I want to say that the oil fields were opened up 10 or 15 years ago under a law inviting development. The invitation was accepted, and the men began work. They spent large sums of money honestly, and it is marked on the ground. There are roads there that will be there for the years to come. If the Government does not give the man who built the improvements the right to make use of them, it confiscates them. It seems to me, if that land is going to be leased on open bidding, and some competitor gets it, other than the man who made those improvements, the person who gets it should, at least, pay for the improvements.

Senator SHAFROTH. That is the way we do in our State.

Mr. JOSLIN. That would not be a fair compensation, but it would be some compensation. I think it would be far wiser to let the company play the game out to the end under the rules in effect at the time they started in. We may not be able to prove every one of those oil claims. If we are able to prove half of them we will be doing well. We should be permitted to use the improvements we put there until we finish the trial. I think it would be the just thing to do. That would be the proper thing to do, it seems to me, no matter whether there is a leasing law passed or not.

The need for oil, as we all know, is extremely urgent. We failed to get oil in the new well, and the canneries have been notified that they must get their oil from California. They are having difficulty in getting it. It would not surprise me at all if some of them are obliged to cease operations.

Under the amendment introduced by the Delegate from Alaska, which covers the situation very well, we can go ahead with development. On the other hand, if there is a leasing law passed it will probably involve a survey of the land, and it will be two or three years before the leasing act can take effect.

Senator WALSH. The act contemplates a condition of that kind and provides for a survey after the manner of placer mining claims.

Mr. JOSLIN. Yes, sir.

Senator WALSH. So there would be no occasion for further survey.

Mr. JOSLIN. There was no occasion for the resurvey in the case of the Alaska coal lands, but they resurveyed them. The lands had all been officially surveyed, and the maps were approved and on file in the Land Office. When the coal-leasing law was passed they surveyed them all over again, and it took a year and a half to do it.

Senator NORRIS. If you should obtain title to all this land, how many acres would there be?

Mr. JOSLIN. Not over 8,000, I think. A considerable part was held originally by this old company, a part of which my company now holds. There are a few individual and other claimants in the field, but very few. Most of the claims originally located have been abandoned.

I want to say to you that it takes men of courage to stick to those claims and do assessment work for 14 years. There are men right there now who have been doing work on their claims for 12 to 15 years, hoping that the Government would eventually recognize their rights properly initiated under the laws at the time.

Senator NORRIS. It requires a great deal of faith.

Mr. JOSLIN. Yes, sir. The prospector lives on faith. It is a valuable thing in the development of new territory.

Senator WALSH. Sometimes that is practically the only thing he has to live on.

Mr. JOSLIN. Yes, sir. On the whole, I earnestly hope that this matter will receive very serious consideration.

There can not be over 50 of these claims, and probably less than that. Probably not more than half that number will ever be proven by commercial wells. It is not at all likely that every one of those claims will have a commercial well upon it. They should be drilled, and they will be drilled if the law permits it.

All that the amendment of the Delegate from Alaska does is to waive the question of continuous diligence on claims which have not been abandoned and upon which $500 worth of work has been done, without regard to whether that diligence has continued every day during the period. There has been work going on on the group—annual work done on the claims. There is great doubt, however, whether that work would be sufficient to be declared continuous diligent work.

Senator Norris. I would like to ask you about these roads that you have built. Are they laid out by the company that builds them? Are they all private roads?

Mr. Joslin. They are graded roads. They are surveyed and graded and in good condition, except that the bridges are rotting.

Senator Norris. And they are in such places as to be utilized by the public if the country is developed?

Mr. Joslin. Yes, sir. They are utilized by the public now. They are the only roads there. The roads are very well located.

Senator Norris. Is there any public assistance by the Territory of Alaska in such cases? Do they have any road law, by which other people help to maintain those roads?

Mr. Joslin. They have a road law, but no money has been spent in that district by the Government authorities.

Senator Norris. Is there such a thing as an assessment on these roads?

Mr. Joslin. No, sir; not in that locality. There is not a foot of road except such as was built and maintained by this oil company, or other oil claimants.

Another feature that I think would be fair to consider in connection with the Alaskan lands outside of these located claims is this: Here is an oil field that is over 100 miles in extent. These located claims are only a little bit of a section of it. The lands subject to the proposed leasing laws are 10 times as great as the area affected here. Speaking for these lands—and I presume I shall have nothing to do with them—I think that the provisions for leasing those lands should grant to the lessee a great deal longer time—perhaps double time—for development of those lands than for the development of similar lands in the Western States, because in those States they are very close to supplies; they are nearly always close to pipe lines and refineries; and so a man can drill a well with far less difficulty in that western territory.

Senator Norris. This proposed amendment would not have application to the entire Territory of Alaska, except as to those few claims?

Mr. Joslin. Yes, sir. The amendment only affects claims located before the withdrawal order.

Senator Norris. One of the difficulties is that in attempting to meet a certain contingency in a certain locality we may do justice there very plainly, but at the same time the enactment will work injustice somewhere else.

Mr. Joslin. But this amendment applies only to Alaska.

Senator Norris. As I understand it, it not only applies to Alaska only, but there are no other claims to which it would be applicable than those to which you have referred.

Mr. Joslin. That is correct, I think, perhaps, there are five or six claims in the Coal Bay District, two or three hundred miles to the west of Katalla, where there are similar oil seepages, may be affected.

Senator Norris. The same kind of wells?

Mr. Joslin. I think there was only one well drilled. I think one or two men had the courage and faith to stick to those claims all these years and do $100 worth of work on them each year.

nator WALSH. What is the character of the $100 worth of work you do on these claims?

. JOSLIN. We do it chiefly on the repairing of roads.

nator WALSH. That is representation work?

r. JOSLIN. Yes, sir.

enator WALSH. It is usually done on the road?

Mr. JOSLIN. Sometimes they put lumber on the claim or build a rick, or a cabin or work on the dock. A great many of these ims have houses on them and piles of lumber for derricks put on em.

The ACTING CHAIRMAN. Is the placing of a pile of lumber condered assessment work?

Mr. JOSLIN. Yes, sir; it is assessment work. Lumber is necessary for the purpose of development.

Senator WALSH. That is, bringing lumber on the claim for the purpose of building there?

Mr. JOSLIN. Yes, sir; building a cabin, boiler house, [illegible] or whatever you need there. The building of a road to a mining [illegible] is considered perfectly proper assessment work, although [illegible] the road may not be within the boundaries of the claim. [illegible] recognized as proper development work.

Senator [illegible] Chairman, it is quite obvious that [illegible] the bill for consideration at this time. [illegible] until tomorrow at 10.30 o'clock, and then [illegible] session, considering that the hearings have been closed.

[illegible] pon, at 1 o'clock, the committee adjourned subject to the [illegible] the chairman.)